2017 HURRICANE KEY MESSAGES

Event: 2017 Hurricane Season

Today's Date: November 20, 2017

This key messages document is for internal and external use. It contains the messaging that has been cleared for use in developing other materials related to this emergency response.

Newly updated information in this document is indicated in bold blue.

Key Messages

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BACKGROUND

The Centers for Disease Control and Prevention (CDC) and Agency for Toxic Substances and Disease Registry (ATSDR) are working with federal, state and local agencies as well as global health partners in response to recent hurricanes.

This document summarizes cleared key messages about hurricanes during the 2017 season and the response by CDC and its partners. It will be updated as new information becomes available and will be distributed regularly. Please share this document with others as appropriate.

Newly updated information is indicated in bold blue with previously cleared messaging and response content shown in black.

UPDATE HIGHLIGHTS

Below are some of the major updates to the CDC Key Messages for the week of 11/17:

- **Updated messages for pregnant women. [Page 51]**
- **New key messages for postpartum women. [Page 53]**
- **Updated guidance for keeping children safe during hurricane cleanup. [Page 55]**
- **New messaging on diabetic ketoacidosis. [Page 58]**
- **Updated messaging on the Strategic National Stockpile. [Page 62]**

PUBLIC HEALTH PRIORITY MESSAGES FOR HURRICANE MARIA

Mental health concerns following the disasters remain a top priority for public health this week. If people are having thoughts of suicide they should get help immediately. Parents and caregivers can also take steps to help children cope. In addition, disaster survivors need to remain diligent about using safe water and avoiding animal hazards.

Medication assistance available from HHS

HHS's Emergency Prescription Assistance Program is a free service that helps residents get medicine, medical supplies, medical equipment and vaccines that were lost, stolen, or damaged due to the disaster. To enroll, call 855-793-7470 or visit www.PHE.gov/EPAP

Use Safe Water to prevent disease

Do not use water you suspect or have been told is contaminated to wash dishes, brush your teeth, wash and prepare food, wash your hands, make ice, or make baby formula.

- Water often can be made safe to drink by boiling or adding disinfectants.
- Follow local recommendations for boiling or treating water in your area.
- Practice good hygiene (handwashing with soap and water) after contact with flood waters.
- Do not bathe in water that may be contaminated with sewage or toxic chemicals. This includes rivers, streams, or lakes that are contaminated by flood water.

Take steps to cope with a disaster.

- After a natural disaster, it is normal to feel sad, mad, or guilty—you may have lost a great deal. Your coping skills may change during periods of crisis and heightened stress, limiting your normal ability to effectively solve problems and cope. Stay in touch with family and friends, find a support network, and talk with a counselor. Getting involved with others can help.

- If you or someone you know feels like completely giving up or are having thoughts of suicide, get help. Contact the National Suicide Prevention Lifeline: 1-800-273-TALK (1-800-273-8255) or use the online Lifeline Crisis Chat. If you are calling from Puerto Rico, call the Emergency Primera Ayuda Sicosocial (PAS) line at 1-800-981-0023. Both are free and confidential. You will be connected to a skilled, trained counselor in your area. For more information, visit the National Suicide Prevention Lifeline.

- The SAMHSA helpline also has counselors available to discuss anxiety related to disaster.

    - Call 1-800-985-5990 or Text TalkWithUs to 66746.
    - Spanish speakers can call 1-800-985-5990 or text HABLANOS to 66746.

The following are some ways to help children cope:

- Set a good example. Take care of yourself, including exercising and practicing healthy eating habits.
- Encourage children to ask questions. Get down at eye level and speak in a calm, gentle voice using words they can understand.
- Maintain a strong connection and show them they are loved.
- Listen for any rumors children might hear at school or on social media and help explain the correct information to them.
- Tell children it is normal to be upset. Let them know that it's not their fault.

Animal hazards

After a disaster, surviving animals often relocate to new areas in search of food, water, and shelter.

- Removing food sources, water, and items that provide shelter for rodents is the best way to prevent contact with rodents.

Rabies in humans is 100% preventable through prompt appropriate medical care. If a dog, mongoose or other animal bites you:

- Wash any wounds immediately with soap and water.
- See your doctor for medical attention. You may be given a post exposure anti-rabies vaccination.
- Report the bite to your doctor and the local department of health.
- If a domestic dog, cat, or ferret bit you, the animal should be confined and observed for 10 days.
- Any illness in the animal during the confinement period should be evaluated by a veterinarian and reported immediately to the local public health department.

PREVENT ILLNESS AFTER A DISASTER

FLOODWATER SAFETY

Emergency management officials have requested that people escaping flood waters as a last resort do not stay in the attic of their house. If the highest floor of your home becomes dangerous, get on the roof. Call 911 for help and stay on the line until the call is answered.

Follow local flood watches, warnings and instructions.

Flood water poses drowning risks for everyone, regardless of their ability to swim. Swiftly moving shallow water can be deadly, and even shallow standing water can be dangerous for small children.

Vehicles do not provide adequate protection from flood waters. They can be swept away or may stall in moving water.

If flooding occurs, get to higher ground. Get out of areas subject to flooding. This includes dips, low spots, canyons, washes, etc.

If you are in an area that is in danger of flooding or you are under a flood watch or warning:

- Gather the emergency supplies, including prescription medications, you previously stocked in your home and stay tuned to your local radio or television station for updates.
- Turn off all utilities at the main power switch and close the main gas valve if evacuation appears necessary.
- Have your immunization records handy or be aware of your last tetanus shot, in case you receive a puncture wound or a wound becomes infected during or after the flood.
- Immunization records should be stored in a waterproof container.
- Fill bathtubs, sinks and containers with clean water. Sanitize the sinks and tubs first by using bleach. Rinse and fill with clean water.

Avoid driving through flooded areas and standing water. As little as six inches of water can cause you to lose control of your vehicle, and two feet of water can cause your car to be swept away. Turn around, don't drown.

- During Hurricane Matthew in October 2016, the majority of deaths were due to drowning and most of those drowning deaths were related to driving through water.
- Employers, workers and volunteers can find additional resources on motor vehicle safety in the NIOSH Key Messages document also available at https://www.cdc.gov/disasters/hurricanes/index.html.

PERSONAL HYGIENE AND HANDWASHING

Keeping hands clean during an emergency helps prevent the spread of germs. If your tap water is not safe to use, wash your hands with soap and water that has been boiled or disinfected. Follow these steps to make sure you wash your hands properly:

- Wet your hands with clean, running water (warm or cold) and apply soap.
- Rub your hands together to make a lather and scrub them well; be sure to scrub the backs of your hands, between your fingers, and under your nails.
- Continue rubbing your hands for at least 20 seconds. Need a timer? Hum the "Happy Birthday" song from beginning to end twice.
- Rinse your hands well under running water.
- Dry your hands using a clean towel or air dry them.

A temporary hand washing station can be created by using a large water jug that contains clean water (for example, boiled or disinfected).

Washing hands with soap and water is the best way to reduce the number of germs on them. If soap and water are not available, use an alcohol-based hand sanitizer that contains at least 60% alcohol. Alcohol-based hand sanitizers can quickly reduce the number of germs on hands in some situations, but sanitizers do not eliminate all types of germs.

Hand sanitizers are not effective when hands are visibly dirty.

Bathing or showering after a water-related emergency should only be done with clean, safe water. Sometimes water that is not safe to drink can be used for bathing, but be careful not to swallow any water or get it in your eyes. Do not bathe in water that may be contaminated with sewage or toxic chemicals. This includes rivers, streams, or lakes that are contaminated by flood water.

If you have a drinking water well, listen to your local health authorities for advice on using your well water for showering and bathing. If extensive flooding has occurred or you suspect that your well may be contaminated, contact your local, state, or tribal health department for specific advice on well testing and disinfection.

STAY SAFE IN EXTREME HEAT

Be aware of yours and others' risk for heat stroke, heat exhaustion, heat cramps and fainting. To avoid heat stress, you should follow CDC's heat safety tips. Stay Cool, Stay Hydrated, and Stay Informed.

Some people are more at risk of developing a heat-related illness than others. Be sure to check on people in these groups and follow tips to keep them safe:

- Older adults (aged 65+)
- People with diabetes
- People with other chronic medical conditions
- Outdoor workers
- Infants and children
- Low income households or households without air conditioning
- Athletes
- Pets

Heat stroke is the most serious heat illness. It happens when the body can't control its own temperature and its temperature rises rapidly. Sweating fails and the body cannot cool down. Body temperature may rise to 106°F or higher within 10 to 15 minutes. Heat stroke can cause death or permanent disability if emergency care is not given. Visit Warning Signs and Symptoms of Heat-Related Illness for more information on how to recognize symptoms and what to do if someone develops a heat-related illness.

For more information on heat-related illnesses and treatment, see the CDC Extreme Heat Web site. Information for workers can be found on the NIOSH heat stress web page.

Employers, workers and volunteers can find additional resources on this topic in the NIOSH Key Messages document also available at https://www.cdc.gov/disasters/hurricanes/index.html.

PROTECT YOURSELF FROM AIR POLLUTION

CDC defers to state health authorities and EPA regarding air pollution in Texas following Hurricane Harvey and in Florida, South Carolina, and Georgia following Hurricane Irma. We have not been involved in air sampling and therefore cannot address specific risks.

After a major storm, burning of debris, chemical releases, and other incidents can lead to poor air quality. Individuals with asthma, COPD, or heart disease and infants and children are most at risk from exposure to air pollution, but everyone can experience effects like eye, lung or throat irritation.

When news reports the EPA Air Quality Index, or other public announcements warn you that levels are high:

- Reduce the amount of time you spend outside and spend more time indoors, where pollution levels are usually lower.
- If you are cleaning up after storm damage try to do indoor work when outdoor air pollution is bad and do outdoor work when pollution levels are lower, usually in the morning and evening.
- Choose easier outdoor activities (like walking instead of running) so you don't breathe as hard.
- Avoid busy roads and highways where air pollution is usually worse because of emissions from cars and trucks.

Odor:

An odor is caused by a substance in the air that you can smell. Odors, or smells, can be either pleasant or unpleasant. In general, most substances that cause odors in the outdoor air are not at levels that can cause serious injury, long-term health effects, or death. However, odors may affect your quality of life and sense of well-being.

Not everyone reacts to environmental odors the same way. In general, if you are young or female, you may be more sensitive to odors. If you don't smoke, you are usually more sensitive to odors than smokers. If you suffer from depression and anxiety disorders, or have migraines, allergies, asthma, and other chronic lung conditions, you may feel worse when you smell unpleasant odors over a long time.

You may have signs and symptoms when exposed to environmental odors, but the symptoms usually go away when the odor is gone. The most common symptoms from environmental odors are headache and nausea.

You can reduce your exposure to odors by

- Exercising indoors during days with more environmental odors
- Staying indoors when your allergies, asthma, and/or chronic lung problems are acting up
- Leaving the area for a few hours if possible

For more information about environmental odors, please contact the Agency for Toxic Substances and Disease Registry (ATSDR) at 1-800-CDC-INFO (236-4636) or visit the environmental odors website: www.atsdr.cdc.gov/odors

TETANUS

Guidance for tetanus-related questions in areas affected by hurricanes:

Protection against tetanus:

- Vaccination prevents tetanus, however this does not last a lifetime. This means that if you were vaccinated before or had tetanus before, you still need to get vaccinated regularly to keep a high level of protection against this serious disease. Being up to date with your tetanus vaccine is the best tool to prevent tetanus.
- Tetanus vaccines are recommended for people of all ages. After a series of tetanus shots during childhood and adolescence, adults need a tetanus booster shot (Td) every 10 years. Td or the tetanus booster shot that add protection against pertussis, or whooping cough, (Tdap) can be used; getting Tdap instead of Td for one tetanus booster during adulthood is recommended to maintain protection against whooping cough.
- Guidance on tetanus vaccination can be found on the following CDC websites.
    - https://www.cdc.gov/disasters/floods/workersafety.html
    - https://www.cdc.gov/disasters/disease/immunizationqa.html
    - https://www.cdc.gov/disasters/disease/tetanus.html
    - https://www.cdc.gov/vaccines/schedules/easy-to-read/index.html

If you have wounds, you should be evaluated for a tetanus immunization. If you receive a puncture wound or a wound contaminated with feces, soil, or saliva, have a health care professional determine whether a tetanus booster is necessary based on individual records.

Risk of tetanus after exposure to flood water:

- Exposure to flood waters does not increase the risk of tetanus. However, some people may have wounds such as puncture to the skin or nail sticks, cuts, bruises, lacerations, or scrapes (or other skin injuries) that become contaminated with flood waters, human or animal wastes, soil, dirt, or saliva. Besides treatment of these wounds, the vaccination status of such persons should be assessed and an age-appropriate tetanus vaccine given if needed. In some of these situations, the doctor or healthcare provider may decide that a tetanus vaccine is needed as early as 5 years since the last dose.
- Being up to date for tetanus vaccine can greatly simplify the treatment for any wound that might occur.

Risk of tetanus to emergency responders, clean-up workers, volunteers

- During evacuation and flood cleanup, emergency responders, cleanup workers, or volunteers may be at increased risk for wounds (as named above). For this reason, such workers should be sure that they are up to date with tetanus vaccination, ideally before starting evacuation or cleanup activities.

- Being up to date for tetanus vaccine can greatly simplify the treatment for any wound that might occur.

Mass vaccination campaigns to prevent tetanus during flooding are not needed.

- Tetanus immunization campaigns for evacuees from flooding disasters are generally not needed. However, each state and local health departments may determine that a vaccination effort is warranted based on local considerations.

Employers, workers and volunteers can find additional resources on electrocution in the NIOSH Key Messages document also available at https://www.cdc.gov/disasters/hurricanes/index.html.

DIARRHEAL DISEASES

Eating or drinking anything contaminated by flood water can cause diarrheal disease (such as *E. coli* or *Salmonella* infection). To protect yourself and your family:

- Practice good hygiene (handwashing with soap and water) after contact with flood waters.
- Do not allow children to play in flood water areas.
- Wash children's hands with soap and water frequently (always before meals).
- Do not allow children to play with toys that have been contaminated by flood water and have not been disinfected.
- For information on disinfecting certain nonporous toys, visit CDC Healthy Water's Cleaning and Sanitizing with Bleach section.

LEPTOSPIROSIS

- We are aware of anecdotal accounts of various infectious diseases, including leptospirosis, being reported by the press and via external partners in Puerto Rico.
- Leptospirosis is a bacterial disease spread by urine from infected animals, which can include many different types of animals such as rodents, dogs, livestock and wildlife. People can get leptospirosis when they have contact with soil or water containing urine from infected animals, or direct contact with urine from infected animals.
- Leptospirosis is endemic in Puerto Rico, meaning it's commonly found in many animals and human illnesses of leptospirosis occur every year.
- Puerto Rico reported about 45-75 cases of leptospirosis a year from 2014 to 2016, about half of the total annual cases for the United States.
- Outbreaks of leptospirosis have occurred in Puerto Rico and Hawaii during past flooding events so it's possible we could see increased numbers of cases following Hurricane Maria.
- During a hurricane or heavy rain, animal urine in soil, water, sewage or on other surfaces can run into floodwater, streams or other natural water surfaces, contaminating them. Animals can also urinate directly in the water.

- Lack of access to clean and safe water—as has been reported in Puerto Rico after Hurricane Maria—can increase the risk of leptospirosis, because people may use natural or untreated water sources for drinking water, and potentially contaminated natural water for bathing.
- Anyone who comes in contact with contaminated soil or water may be at risk for leptospirosis. But some activities that increase a person's risk of getting sick include:
    - Drinking from untreated water sources that are contaminated (including floodwater, streams, rivers, contaminated tap water)
    - Bathing, wading, or swimming in contaminated water, especially when putting their head under water or when a person has an open wound or scratch.
    - Eating food that's been exposed to contaminated water or has been eaten and potentially urinated on by rodents or other animals.
- Symptoms can develop between two and 30 days but usually between 5 and 14 days after someone is exposed to the bacteria.
- In most cases, the illness involves flu-like symptoms (fever, chills, muscle aches, headaches). Other symptoms may include: conjunctivitis (red eyes), vomiting, diarrhea, stomach pain, jaundice (yellowing of the skin and eyes), and skin rash.
- About 5-10 percent of people that get sick with leptospirosis can progress to severe disease, including respiratory symptoms, hemorrhage, meningitis, heart arrhythmias, and kidney or liver failure and, on rare occasions, death.
- Anyone with symptoms of leptospirosis should see a doctor as soon as possible. Early treatment with antibiotics may help prevent more severe illness and decrease the length of the illness.
- The most important way to prevent leptospirosis is by avoiding water that may be contaminated. If that's not possible, follow these steps to reduce your risk of leptospirosis:
    - Treat water to make it safe to drink, especially if it has been collected from a source that could be exposed to animals. Boiling or chemically treating water can help reduce the risk of leptospirosis.
    - Cover cuts or abrasions with waterproof bandages or other coverings that seal out water.
    - Do not wade, swim, bathe, submerse your head in, in or swallow water from any non-treated water source, as it may contain animal urine.
    - Wear waterproof protective clothing, shoes or boots near soil or water that may be contaminated with animal urine.
    - Avoid eating food that rodents or other animals may have urinated on or near.
- Spread between people is rare, though has been documented through sexual intercourse and breast feeding.
- Healthcare workers should use standard infection control precautions to avoid contact with contaminated fluids from ill patients with suspected or diagnosed leptospirosis. If there is a risk of body fluid splashes, face/eye protection should also be worn.

WOUND INFECTIONS

Open wounds and rashes exposed to flood waters can become infected. To protect yourself and your family:

- Avoid contact with flood waters if you have an open wound.
- Cover clean, open wounds with a waterproof bandage to reduce chance of infection.
- Keep open wounds as clean as possible by washing well with soap and clean water.
- Seek immediate medical care if a wound develops redness, swelling, oozing, or if you have other signs of infection such as fever, increasing pain, shortness of breath, confusion, disorientation or high heart rate.

The risk for injury during and after a hurricane and other natural disasters is high. Prompt first aid can help heal small wounds and prevent infection. Wash your hands with soap and water before and after providing first aid for a wound to help prevent infection. Use an alcohol-based hand sanitizer that contains at least 60% if soap and water are not available. Tetanus, other bacterial infections, and fungal infections are potential health threats for persons who have open wounds.

Seek medical attention as soon as possible if:

- There is a foreign object (soil, wood, metal, or other objects) embedded in the wound;
- A wound is a result of an animal bite;
- A wound is the result of a puncture by a dirty object;
- The wound is infected (increased pain and soreness, swelling, redness, draining, or you develop a fever);
- You have signs of sepsis such as confusion or disorientation, shortness of breath, high heart rate, fever or shivering, extreme pain or discomfort or clammy or sweaty skin.

Take care of wounds:

- Wash your hands thoroughly with soap and clean water, if possible.
- Avoid touching the wound with your fingers while treating it (if possible, use disposable gloves).
- Remove obstructive jewelry and clothing from the injured body part.
- Apply direct pressure to any bleeding wound to control bleeding.
- Clean the wound after bleeding has stopped.
    - Examine wounds for dirt and foreign objects.
    - Gently flood the wound with bottled water or clean running water (if available, saline solution is preferred).
    - Gently clean around the wound with soap and clean water.
    - Pat dry and apply an adhesive bandage or dry clean cloth.
- Leave unclean wounds, bites, and punctures open. Wounds that are not cleaned correctly can trap bacteria and result in infection.

- Provide pain relievers when possible.
- Check on wound every 24 hours.

Other Considerations

- Expect a variety of infection types from wounds exposed to standing water, sea life, and ocean water.
- Wounds in contact with soil and sand can become infected.
- Puncture wounds can carry bits of clothing and dirt into wounds and result in infection
- Crush injuries are more likely to become infected than wounds from cuts.
- Take steps to prevent tetanus. (See tetanus section.)

DRINK CLEAN, SAFE WATER AND EAT SAFE FOOD

PREPARING FOR FOOD AND WATER NEEDS

Follow these steps to make sure you and your family have enough safe food and water (for drinking, cooking, bathing, etc.) available in the event of a disaster or emergency.

Prepare an Emergency Food Supply

A disaster can easily disrupt the food supply at any time, so plan to have at least a 3-day supply of food on hand. Keep foods that:

- Have a long storage life
- Require little or no cooking, water, or refrigeration, in case utilities are disrupted
- Meet the needs of babies or other family members who are on special diets
- Meet pets' needs
- Are not very salty or spicy, as these foods increase the need for drinking water, which may be in short supply

How to Store Emergency Food

When storing food, it is not necessary to buy dehydrated or other types of emergency food.

- Check the expiration dates on canned foods and dry mixes. Home-canned food usually needs to be thrown out after a year.
- Use and replace food before its expiration date.

Certain storage conditions can enhance the shelf life of canned or dried foods. The ideal location is a cool, dry, dark place. The best temperature is 40° to 70°F.

- Store foods away from ranges or refrigerator exhausts. Heat causes many foods to spoil more quickly.
- Store food away from petroleum products, such as gasoline, oil, paints, and solvents. Some food products absorb their smell.
- Protect food from rodents and insects. Items stored in boxes or in paper cartons will keep longer if they are heavily wrapped or stored in waterproof, airtight containers.

Preparing Food

Preparing food after a disaster or emergency may be difficult due to damage to your home and loss of electricity, gas, and water. Having the following items available will help you to prepare meals safely:

- Cooking utensils
- Knives, forks, and spoons
- Paper plates, cups, and towels
- A manual can- and bottle-opener
- Heavy-duty aluminum foil
- Propane gas or charcoal grill; camp stove
- Fuel for cooking, such as charcoal. (CAUTION: Only use charcoal grills or camp stoves outside of your home to avoid smoke inhalation and carbon monoxide poisoning.)

Prepare an Emergency Water Supply

- Store at least 1 gallon of water per day for each person and each pet. Consider storing more water than this for hot climates, for pregnant women, and for people who are sick.
- Store at least a 3-day supply of water for each person and each pet. Try to store a 2-week supply if possible.
- Observe the expiration date for store-bought water; replace other stored water every 6 months.
- Store a bottle of unscented liquid household chlorine bleach to disinfect your water and to use for general cleaning and sanitizing. Try to store bleach in an area where the average temperature stays around 70°F (21°C). Because the amount of active chlorine in bleach decreases over time due to normal decay, consider replacing the bottle each year.

Water Containers (Cleaning and Storage)

Unopened commercially bottled water is the safest and most reliable emergency water supply.

Use of food-grade water storage containers, such as those found at surplus or camping supply stores, is recommended if you prepare stored water yourself.

1. Before filling with safe water, use these steps to clean and sanitize storage containers:
2. Wash the storage container with dishwashing soap and water and rinse completely with clean water.
3. Sanitize the container by adding a solution made by mixing 1 teaspoon of unscented liquid household chlorine bleach in one quart of water.
4. Cover the container and shake it well so that the sanitizing bleach solution touches all inside surfaces of the container.
5. Wait at least 30 seconds and then pour the sanitizing solution out of the container.
6. Let the empty sanitized container air-dry before use OR rinse the empty container with clean, safe water that already is available.

Avoid using the following containers to store safe water:

- Containers that cannot be sealed tightly
- Containers that can break, such as glass bottles
- Containers that have ever held toxic solid or liquid chemicals, such as bleach or pesticides
- Plastic or cardboard bottles, jugs, and containers used for milk or fruit juices

For proper water storage:

- Label container as "drinking water" and include storage date.
- Replace stored water that is not commercially bottled every six months.
- Keep stored water in a place with a fairly constant cool temperature.
- Do not store water containers in direct sunlight.
- Do not store water containers in areas where toxic substances such as gasoline or pesticides are present.

AFTER THE STORM

Food may not be safe to eat during and after an emergency. Safe water for drinking, cooking, and personal hygiene includes bottled, boiled, or treated water. Your state, local, or tribal health department can make specific recommendations for boiling or treating water in your area.

Food: Throw away food that may have come in contact with flood or storm water, perishable foods, and those with an unusual odor, color, or texture. When in doubt, throw it out.

Water: Do not use water you suspect or have been told is contaminated to wash dishes, brush your teeth, wash and prepare food, wash your hands, make ice, or make baby formula.

FOOD

Foodborne illness, or food poisoning, is a risk from food contaminated from flood water and from perishable food not held at a safe temperature due to power outages. If foods of animal origin, especially raw meat and poultry, have not been held at a safe temperature, germs already present can grow to high numbers. Other foods not held at the right temperature can also spoil.

Do the following with food and containers that may have had contact with flood or storm water.

Throw away the following foods:

- Food that has an unusual odor, color, or texture. When in doubt, throw it out.
- Perishable foods (including meat, poultry, fish, eggs and leftovers) in your refrigerator when the power has been off for 4 hours or more.
- Canned foods or food containers that are bulging, opened, or damaged. Throw away the food if the container spurts liquid or foam when you open it or the food inside is discolored, moldy, or smells bad.
- Food not in packages or cans.
- Packaged food: Throw away food containers with screw-caps, snap-lids, crimped caps, twist caps, flip tops, and snap-open tops, as well as home-canned foods because they cannot be disinfected. Throw away food in cardboard containers, including juice/milk/baby formula boxes.

Thawed food that contains ice crystals can be refrozen or cooked. Freezers, if left unopened and full during a power outage, will keep food safe for 48 hours (24 hours if half full).

How to reuse commercially prepared cans and retort pouches (like flexible, shelf-stable juice and seafood packages):

- Remove labels if they are removable.
- Brush or wipe away dirt or silt.
- Wash cans and pouches with soap and water, using hot water if available.
- Rinse cans and pouches with water that is safe for drinking, if available.
- Sanitize cans and pouches in one of two ways. 1.) Place them in a solution of 1 cup (8 ounces/250 milliliters) of bleach in 5 gallons of water for 15 minutes. OR 2.) Submerge in a pot of water, bring to a boil, and continue boiling for 2 minutes.
- Re-label cans or pouches with a marker. Include the expiration date.

- Use food in reconditioned cans or pouches as soon as possible.

Store Food Safely

- While the power is out, keep the refrigerator and freezer doors closed as much as possible.

Feeding infants and young children

- Breastfed infants should continue breastfeeding. For formula-fed infants, use ready-to-feed formula if possible. If using ready-to-feed formula is not possible, it is best to use bottled water to prepare powdered or concentrated formula when your tap water is unsafe. If bottled water is not available, check with local authorities to find the status of your drinking water to see if boiling it will make it safe to drink. Use treated water to prepare formula only if you do not have bottled or boiled water.
- If water is contaminated with a chemical, boiling it will not remove the chemical or make it safe to consume.
- If you prepare formula with boiled water, let the formula cool sufficiently before giving it to an infant. Put a couple drops of formula on the back of your hand to see if it is too hot.
- Clean feeding bottles with bottled, boiled, or treated water before each use. Throw out bottle nipples or pacifiers that have been in contact with flood waters.
- Wash your hands before preparing formula and before feeding an infant. You can use alcohol-based hand sanitizer for sanitizing your hands if water is not available for handwashing.

Clean and sanitize food-contact surfaces

Throw out wooden cutting boards, baby bottle nipples, and pacifiers if they have come into contact with flood waters because they cannot be properly sanitized. Clean and sanitize food-contact surfaces in a four-step process:

1. Wash with soap and warm, clean water.
2. Rinse with clean water.
3. Sanitize by immersing for 1 minute in a solution of 1 cup (8 ounces or 250 milliliters) of chlorine bleach (5.25%, unscented) in 5 gallons of clean water.
4. Allow to air dry.

Note: Do not use your fireplace for cooking until the chimney has been inspected for cracks and damage. Sparks may escape into your attic through an undetected crack and start a fire.

WATER

Safe Drinking Water

- After an emergency, especially after flooding, drinking water may not be available or safe to drink for personal use.
- Do not use water you suspect or have been told is contaminated to wash dishes, brush your teeth, wash and prepare food, make ice, or make baby formula.
- Alcohol dehydrates the body, which increases the need for drinking water.
- Floods and other disasters can damage drinking water wells and lead to aquifer and well contamination. Flood waters can contaminate well water, rivers, streams, and lakes with livestock waste, human sewage, chemicals, and other contaminants which can lead to illness when used for drinking, bathing, and other hygiene activities.

Make Water Safe

Water often can be made safe to drink by boiling, adding disinfectants, or filtering.

IMPORTANT: Water contaminated with fuel or toxic chemicals will not be made safe by boiling or disinfection. Use a different source of water if you know or suspect that water might be contaminated with fuel or toxic chemicals.

Boil Water:

If you don't have safe bottled water, you should **boil water** to make it safe. Boiling is the surest method to make water safer to drink by killing disease-causing organisms, including viruses, bacteria, and parasites.

You can improve the flat taste of boiled water by pouring it from one clean, disinfected container to another and then allowing it to stand for a few hours, OR by adding a pinch of salt for each quart or liter of boiled water.

If the water is cloudy:

- Filter it through a clean cloth, paper towel, or coffee filter OR allow it to settle.
- Draw off the clear water.
- Bring the clear water to a rolling boil for one minute (at elevations above 6,500 feet, boil for three minutes).
- Let the boiled water cool.
- Store the boiled water in clean sanitized containers with tight covers.

If the water is clear:

- Bring the clear water to a rolling boil for one minute (at elevations above 6,500 feet, boil for three minutes).
- Let the boiled water cool.
- Store the boiled water in clean sanitized containers with tight covers.

Disinfectants:

If you don't have clean, safe, bottled water and if boiling is not possible, you often can make water safer to drink by using a disinfectant, such as unscented household chlorine bleach, iodine, or chlorine dioxide tablets. These can kill most harmful organisms, such as viruses and bacteria. However, only chlorine dioxide tablets are effective in controlling more resistant organisms, such as the parasite Cryptosporidium. If the water is contaminated with a chemical, adding a disinfectant will not make it drinkable.

To disinfect water:

Bleach comes in different concentrations. Make sure you know the concentration of bleach you are using before using to disinfect drinking water. It should be on the label.

- Clean and disinfect water containers properly before each use. Use containers that are approved for water storage. Do not use containers previously used to store chemicals or other hazardous materials.
- Filter water through a clean cloth, paper towel, or coffee filter OR allow it to settle, then draw off the clear water.

When using 5-6% unscented liquid household chlorine bleach:

- Add a little less than 1/8 teaspoon (8 drops or about 0.5 milliliters) for each gallon of clear water (or 2 drops of bleach for each liter or each quart of clear water).
- If you do not have clear water or are not able to filter the water to make it clear, add a little less than ¼ teaspoon (16 drops, or about 1 milliliter) of bleach for each gallon of cloudy water (or 4 drops of bleach for each liter or each quart of cloudy water). Stir the mixture well.
- Let it stand for at least 30 minutes before using.
- Store the disinfected water in clean, disinfected containers with tight covers.

When using 8.25% unscented liquid household chlorine bleach:

- Add a little less than 1/8 teaspoon (6 drops or about 0.5 milliliters) of unscented liquid household chlorine (8.25%) bleach for each gallon of clear water (or 2 drops of bleach for each liter or each quart of clear water).

- If you do not have clear water or are not able to filter the water to make it clear, add 12 drops (about 1 milliliter) of bleach for each gallon of cloudy water (or 3 drops of bleach for each liter or each quart of cloudy water).

Filters:

Many portable water filters can remove disease-causing parasites such as *Cryptosporidium* and *Giardia* from drinking water.

- If you are choosing a portable water filter, try to pick one that has a filter pore size small enough to remove both bacteria and parasites. Most portable water filters do not remove bacteria or viruses.
- Carefully read and follow the manufacturer's instructions for the water filter. After filtering, add a disinfectant such as iodine, chlorine, or chlorine dioxide to the filtered water to kill any viruses and remaining bacteria.

Water Treatment Resources:

To learn more about water filters and treatments that can remove microorganisms such as viruses, bacteria, and parasites (such as Cryptosporidium), see the following resources:

- Making Water Safe in an Emergency
- A Guide to Water Filters
- A Guide to Drinking Water Treatment and Sanitation for Backcountry and Travel Use covers information on the effectiveness of various water treatment methods.
- A Guide to Commercially-Bottled Water and Other Beverages
- Emergency Disinfection of Drinking Water

Finding Emergency Water Sources

Alternative sources of clean water can be found inside and outside the home. DO NOT DRINK water that has an unusual odor or color, or that you know or suspect might be contaminated with fuel or toxic chemicals; use a different source of water.

The following are possible sources of water:

- Water from your home's water heater tank (part of your drinking water system, not your home heating system)
- Melted ice cubes made with water that was not contaminated
- Water from your home's toilet tank (not from the bowl), if it is clear and has not been chemically treated with toilet cleaners such as those that change the color of the water

- Liquid from canned fruit and vegetables
- Water from swimming pools and spas can be used for personal hygiene, cleaning, and related uses, but not for drinking.

Listen to reports from local officials for advice on water precautions in your home. It may be necessary to shut off the main water valve to your home to prevent contaminants from entering your piping system.

Outside the Home:

Flood waters can contaminate well water and rivers, streams, and lakes with livestock waste, human sewage, chemicals, and other contaminants which can lead to illness when used for drinking, bathing, and other hygiene activities.

Water from sources outside the home must be treated as described in Make Water Safe, because it could be contaminated with livestock waste or human sewage. If you suspect or know the water is contaminated with toxic chemicals or fuels, it cannot be made safe and you should not drink or bathe in this water.

Possible sources of water that could be made safe by treatment include:

- Rainwater
- Streams, rivers, and other moving bodies of water
- Ponds and lakes
- Natural springs

Note: DO NOT USE using water that has been contaminated by fuels or toxic chemicals.

Unsafe Water Sources

Never use water from the following sources:

- Radiators
- Hot water boilers (part of your home heating system)
- Water beds (fungicides added to the water and/or chemicals in the vinyl may make water unsafe for use)

Private Drinking Water Wells

Floods and other disasters can damage or contaminate wells. Dug wells, bored wells, and other wells less than 50 feet deep are more likely to be contaminated, even if damage is not apparent.

- After a disaster, it is safest to drink bottled water until you are certain that your water is free of contaminants and safe to drink.
- If extensive flooding has occurred or you suspect that the well may be contaminated, DO NOT drink the water. Use a safe water supply like bottled or treated water.
- Contact your local, state, or tribal health department for specific advice on wells and testing.

IMPORTANT: Fuel and other chemical releases and spills are common during floods.

- Water contaminated with fuel or toxic chemicals will **not** be made safe by boiling or disinfection. Until you know the water is safe, use bottled water or some other safe supply of water.
- If you suspect your water has fuel or chemical contamination, contact your local health department for specific advice.

For more information: Emergency Treatment for Wells

MEDICATIONS

Some drugs require refrigeration to keep their strength, including many liquid drugs.

- When the power is out for a day or more, throw away any medication that should be refrigerated, unless the drug's label says otherwise.
- If a life depends on the refrigerated drug, but the medications have been at room temperature, use them only until a new supply is available.
- Replace all refrigerated drugs as soon as possible.

HHS's Emergency Prescription Assistance Program (EPAP) has been activated in Puerto Rico and the U.S. Virgin Islands. It is a free service that helps residents get medicine, medical supplies, medical equipment and vaccines that were lost, stolen, or damaged due to the disaster. To enroll, call 855-793-7470 or visit www.PHE.gov/EPAP

Resources for people with chronic disease or disability

STAY SAFE IN A SHELTER OR IN CROWDED LIVING CONDITIONS

Follow safe hygiene and diapering recommendations when in a shelter.

In emergency situations, making sure that diaper changing practices remain hygienic is essential to reducing the spread of germs. Even a microscopic amount of fecal matter can contain millions of germs. CDC has developed guidelines and checklists to help parents, childcare providers, emergency

responders, and others learn how to practice safe and germ-free diaper changing in emergency situations.

Emergency shelters should ensure accessibility for persons with disabilities, including people who use wheelchairs or scooters or who have difficulty walking, people who are deaf or hard-of-hearing, and people who are blind or have low vision.

Americans with Disabilities Act Checklist for Emergency Shelters

When planning for older adults, officials must ensure that shelter facilities meet the special needs of this population. For example, shelters must:

- Be accessible to people who need help or certain accommodations to perform routine care or activities of daily living (e.g., to use the bathroom, bathe, dress, groom, or get into and out of bed).
- Be accessible to people who have certain disabilities, such as those who use a wheelchair.
- Include signs and other forms of communication that can be understood by older adults.
- Include energy sources for electricity (i.e., generators), heating, and air conditioning.

BODY LICE

Body lice are parasitic insects that live on clothing and bedding. Body lice can spread under crowded living conditions where hygiene is poor. Body lice are spread through direct physical contact with a person who has body lice or through contact with infested clothing, beds, bed linens, or towels.

The following are steps that can be taken to help prevent and control the spread of body lice:

- Bathe regularly and change into properly washed clothes at least once a week; wash infested clothing at least once a week.
- Machine wash and dry infested clothing and bedding using the hot water (at least 130°F) laundry cycle and the high heat drying cycle. Clothing and items that are not washable can be dry-cleaned OR sealed in a plastic bag and stored for 2 weeks.
- Do not share clothing, beds, bedding, and towels used by a person who has body lice.

SCABIES

Scabies is a skin condition caused by mites. It commonly leads to intense itching and a pimple-like skin rash that may affect various areas of the body. Scabies is contagious and can spread quickly in areas where people are in close physical contact.

Prevent scabies by avoiding skin-to-skin contact with a person who has scabies and contact with items such as clothing or bedding used by a person infested with scabies mites.

Scabies should be treated with topical creams that can kill the mites, which are available by prescription from your health care provider. In addition to the infested person, treatment is also recommended for people they have been in contact with.

Bedding, clothing, and towels used by infested persons and people they are in close contact with should be decontaminated. To disinfest items,

- Wash them in hot water and dry in a hot dryer or dry-clean.
- Store items that can't be washed in a sealed plastic bag for at least 72 hours.
- Thoroughly clean and vacuum rooms.

For more information about scabies, visit https://www.cdc.gov/parasites/scabies/

CONJUNCTIVITIS

CDC is working with the Puerto Rico Department of Health to monitor cases of conjunctivitis, or pink eye, and provide assistance, as needed.

Below are a list of ways to minimize the spread of conjunctivitis to other people.

If you have conjunctivitis, you can help limit its spread to other people by following these steps:

- Wash your hands often with soap and warm water. Wash them especially well before and after cleaning, or applying eye drops or ointment to, your infected eye. If soap and water are not available, use an alcohol-based hand sanitizer that contains at least 60% alcohol to clean hands. (See CDC's Clean Hands Save Lives! website for tips on proper handwashing.)
- Avoid touching or rubbing your eyes. This can worsen the condition or spread it to your other eye.
- With clean hands, wash any discharge from around your eye(s) several times a day using a clean, wet washcloth or fresh cotton ball. Throw away cotton balls after use, and wash used washcloths with hot water and detergent, then wash your hands again with soap and warm water.
- Do not use the same eye drop dispenser/bottle for your infected and non-infected eyes.
- Wash pillowcases, sheets, washcloths, and towels often in hot water and detergent; wash your hands after handling such items.
- Stop wearing contact lenses until your eye doctor says it's okay to start wearing them again.
- Clean eyeglasses, being careful not to contaminate items (like hand towels) that might be shared by other people.

- Clean, store, and replace your contact lenses as instructed by your eye doctor.
- Do not share personal items, such as pillows, washcloths, towels, eye drops, eye or face makeup, makeup brushes, contact lenses, contact lens storage cases, or eyeglasses.
- Do not use swimming pools.

If you are around someone with conjunctivitis, you can reduce your risk of infection by following these steps:

- Wash your hands often with soap and warm water. If soap and warm water are not available, use an alcohol-based hand sanitizer that contains at least 60% alcohol to clean hands. (See CDC's Clean Hands Save Lives! website for tips on proper handwashing.)
- Wash your hands after contact with an infected person or items he or she uses; for example, wash your hands after applying eye drops or ointment to an infected person's eye(s) or after putting their bed linens in the washing machine.
- Avoid touching your eyes with unwashed hands.
- Do not share items used by an infected person; for example, do not share pillows, washcloths, towels, eye drops, eye or face makeup, makeup brushes, contact lenses, contact lens storage cases, or eyeglasses.

General Conjunctivitis Key Messages:

- Conjunctivitis – or pink eye – is common in adults and children. It spreads quickly and sometimes needs medical treatment, depending on the cause.
- Several viruses and bacteria can cause conjunctivitis (pink eye). Both viral and bacterial conjunctivitis are highly contagious. Each of these types of germs can spread from person to person in different ways. They usually spread from an infected person to others through:
    - Close personal contact, such as touching or shaking hands
    - The air by coughing and sneezing
    - Touching an object or surface with germs on it, then touching your eyes before washing your hands

Classic symptoms can include:

- Pink or red color in the white of the eye(s)
- Watery eyes
- Itchy or scratchy eyes

- Discharge from the eye(s)
- Crusting of eyelids or lashes

For more information on conjunctivitis, please visit online at: https://www.cdc.gov/conjunctivitis/index.html.

RETURNING HOME

Return to your flooded home only after local authorities have told you it is safe to do so.

CLEANING AND SANITIZING YOUR HOME

When returning to your home after a hurricane or flood, be aware that flood water may contain sewage and other hazards. Protect yourself and your family by following these steps:

INSIDE THE HOME

- Keep children and pets out of the affected area until cleanup has been completed.
- Wear personal protective equipment, including rubber boots, rubber gloves, and goggles during cleanup of affected area.
- While cleaning up areas with mold damage, wear a NIOSH-approved N-95 respirator, or one that provides even more protection. Look for N-95 on the package. **Do not use N-95 respirators on children. N-95 respirators do not fit children and will not protect them.**
- Remove and discard items that cannot be washed and disinfected (such as, mattresses, carpeting, carpet padding, rugs, upholstered furniture, cosmetics, stuffed animals, baby toys, pillows, foam-rubber items, books, wall coverings, and most paper products).
- Remove and discard drywall and insulation that has been contaminated with sewage or flood waters.
- This should include material that are located a foot higher than the high water line.
- Thoroughly clean all hard surfaces (such as flooring, concrete, molding, wood and metal furniture, countertops, appliances, sinks, and other plumbing fixtures) with hot water and laundry or dish detergent.
- Help the drying process by using fans, air conditioning units, and dehumidifiers.
- After completing the cleanup, wash your hands with soap and clean water.
- Wash all clothes worn during the cleanup in hot water and detergent. These clothes should be washed separately from uncontaminated clothes and linens.
- Wash clothes contaminated with flood or sewage water in hot water and detergent. It is recommended that a laundromat be used for washing large quantities of clothes and linens until your onsite wastewater system has been professionally inspected and serviced.

- Seek immediate medical attention if you become injured or ill.

Disinfect toys

Remember that anything that has had contact with floodwater could carry germs. To keep your kids safe, make sure their toys are clean. Some toys cannot be cleaned, particularly those that have been in floodwaters. When in doubt, throw toys out.

- Make a cleaning fluid by mixing 1 cup of bleach in 5 gallons of water and wash off toys carefully with your cleaner.
- If you have dishwasher-safe toys, they can be cleaned in a commercial dishwasher that has a dry cycle or a final rinse that exceeds 113°F for 20 minutes or 122°F for 5 minutes or 162°F for 1 minute.
- Once toys are cleaned, let them air dry.
- Stuffed animals or cloth toys that were wet with floodwater should be thrown out.

See also Reentering Your Flooded Home, Mold Cleanup and Remediation, and Cleaning and Sanitizing With Bleach after an Emergency.

MOLD

After natural disasters such as hurricanes, tornadoes, and floods, excess moisture and standing water contribute to the growth of mold in homes and other buildings. When returning to a home that has been flooded, be aware that mold may be present and may be a health risk for your family.

If there is mold growth in your home, you should clean up the mold and fix any water problem, such as leaks in roofs, walls, or plumbing. Controlling moisture in your home is the most critical factor for preventing mold growth. Keep children and pets out of the affected area until cleanup has been completed.

Detailed information about cleaning up mold is available in the Homeowner's and Renter's Guide to Mold Cleanup After Disasters.

People at Greatest Risk from Mold

- People with asthma, allergies, or other breathing conditions may be more sensitive to mold.
- People with a weakened immune system, such as people receiving treatment for cancer, people who have had an organ or stem cell transplant, and people taking medicines that suppress the immune system, are more likely to get a serious illness from mold.
- If you have a breathing problem like asthma, a weakened immune system, or are pregnant, try not to enter a building with mold damage.
- Children should not take part in disaster cleanup work.

- In some homes and schools it might be hard to get rid of all mold quickly, so children could be exposed to some mold.
- Children and adults with asthma or a weakened immune system should stay out of buildings with mold growth.
- For healthy children and adults mold exposure can lead to cough, wheeze, eye and skin irritation, and runny or stuffy nose.

Possible Health Effects of Mold Exposure

- People who are sensitive or allergic to mold may experience problems like asthma attacks, wheezing, stuffy nose, and irritated eyes and skin.
- Mold exposure can lead to severe infections in people with a weakened immune system.
- If you or your family members have health problems after exposure to mold, contact your doctor or other health care provider.

Recognizing Mold

You may recognize mold by:

- **Sight.** Are the walls and ceiling discolored, or do they show signs of mold growth or water damage?
- **Smell.** Do you smell a bad odor, such as a musty, earthy smell or a foul stench?

Safely Preventing Mold Growth

- Clean up and dry out the building as quickly as you can.
- Open doors and windows.
- Use fans to dry out the building. Position fans to blow air out doors or windows.
- See the fact sheet for drying out your house and Reentering Your Flooded Home.
- When in doubt, take it out! Remove all porous items that have been wet for more than 48 hours and that cannot be thoroughly cleaned and dried. These items can remain a source of mold growth and should be removed from the home. Porous, non-cleanable items include carpeting and carpet padding, upholstery, wallpaper, drywall, floor and ceiling tiles, insulation material, some clothing, leather, paper, wood, and food.
- Removal and cleaning are important because even dead mold may cause allergic reactions in some people.
- To prevent mold growth, clean wet items and surfaces with detergent and water.
- Homeowners may want to temporarily store items outside of the home until insurance claims can be filed. See recommendations by the Federal Emergency Management Agency (FEMA).

Cleaning Up Mold

To remove mold growth from hard surfaces use commercial products, soap and water, or a bleach solution of no more than 1 cup of household laundry bleach in 1 gallon of water. Follow the manufacturers' instructions for use (see product label). Use a stiff brush on rough surface materials such as concrete.

When removing mold:

- Never mix bleach with ammonia or other household cleaners. Mixing bleach with ammonia or other cleaning products will produce dangerous, toxic fumes.
- Open windows and doors to provide fresh air.
- Wear rubber boots, rubber gloves, and goggles during cleanup of affected area.
- If the area to be cleaned is more than 10 square feet, consult the U.S. Environmental Protection Agency (EPA) guide titled Mold Remediation in Schools and Commercial Buildings. Also available is A Brief Guide to Mold, Moisture, and Your Home.
- Always follow the manufacturer's instructions when using bleach or any other cleaning product.
- For more information on personal safety while cleaning up after a natural disaster, see Response Worker Health and Safety

Protect your nose and mouth against breathing in mold:

Before you enter a building with mold damage, wear at least a NIOSH-approved N-95 respirator, which you can buy at a home supply store. If you plan to spend a lot of time removing moldy belongings or doing work like ripping out moldy drywall, wear a half-face or full-face respirator. Make certain that you follow instructions on the package for fitting the mask respirator tightly to your face. N-95 respirators are only approved for filtering out dust in the air (for example, from sweeping, sawing, and mold removal). This type of respirator will not protect you agains chemicals or gases in the air, such as cleaning products or carbon monoxide.

Employers, workers and volunteers can find additional resources on this topic in the NIOSH Key Messages document also available at https://www.cdc.gov/disasters/hurricanes/index.html.

OUTSIDE THE HOME

- Keep children and pets out of the affected area until cleanup has been completed.
- Have your onsite waste-water system professionally inspected and serviced if you suspect damage.
- Wash all clothes worn during the cleanup in hot water and detergent. These clothes should be washed separately from uncontaminated clothes and linens.
- After completing the cleanup, wash your hands with soap and clean water.
- Seek immediate medical attention if you become injured or ill. See wound care information.

SOLID WASTE MANAGEMENT AND DEBRIS REMOVAL

Solid waste results from various sources, such as animal wastes, hazardous wastes, industrial and non-infectious medical wastes, food wastes, mineral waste, and nonhazardous waste.

Public health concerns regarding solid waste include aesthetics (e.g., the visual appearance of many collection sites and odors associated with solid waste), the potential for groundwater contamination, an increase in vectors (rodents, insects, etc.) that may spread diseases, and other issues regarding sanitation.

When cleaning up solid waste and debris,

- wear appropriate personal protective equipment (i.e hard hats, goggles, N95 masks, heavy work gloves, waterproof boots with steel toe and insole, earplugs, long-sleeved shirt, and long pants).
- Stay safe in hot weather by taking breaks in shaded areas, drinking water and nonalcoholic fluids often, and wear light and loose-fitted clothing.

After an emergency, federal, state, and local personnel will be working to establish debris-management programs, including household hazardous waste collection and disposal programs. These efforts may take days or weeks to come to all communities. In the meantime, exercise caution and report concerns to local environmental, health, and waste disposal authorities.

For more information, visit https://www.cdc.gov/nceh/ehs/NALBOH/factsheets/solid_waste.pdf

CHEMICAL AND OIL EXPOSURES

- Use extreme caution when returning to your area after a flood. Be aware of potential chemical hazards you may encounter during flood recovery. Flood waters may have buried or moved hazardous chemical containers of solvents or other industrial chemicals from their normal storage places.
- If any propane tanks (whether 20-lb. tanks from a gas grill or household propane tanks) are discovered in a previously flooded area, do not attempt to move them yourself. These represent a very real danger of fire or explosion, and if any are found, police or fire departments or your State Fire Marshal's office should be contacted immediately.
- Car batteries, even those in flood water, may still contain an electrical charge and should be removed with extreme caution by using insulated gloves. Avoid coming in contact with any acid that may have spilled from a damaged car battery.
- Containers of dry chemicals that may have become wet due to flooding in your home or garage can be dangerous. When in doubt about how to safely handle these chemicals, contact your local fire department.
- Avoid Oil Spills

- Crude oil is a mixture of chemicals that could be released into the environment during an emergency such as a hurricane and flood. In flood situations, some parts of the oil will float on water and can be seen as a film on the surface, and other parts will sink to the bottom. Other parts of the oil can become fumes in the air. People can come into contact with these chemicals by getting them on their skin or by breathing them in the air. If you notice oil in the water, stay away from it and contact local authorities or EPA at 1-800-424-8802. Emergency responders and workers should use appropriate clothing and personal protective equipment when working in these hazardous conditions.

- If you have come into contact with a chemical from a spill or accident and feel ill, seek medical attention immediately from a health care professional.
- Your regional poison center is available 24/7 by calling 1-800-222-1222 to help assist you in determining if you should seek medical attention following a potential chemical exposure or for information on chemicals.
- Check with your state and/or local health department and news sources to determine if there any known chemical spills in your area and up to date information on recommendations on how to protect yourself.
- CDC has general information available online regarding chemical emergencies here: (https://emergency.cdc.gov/chemical/overview.asp). Topics discussed include what a chemical emergency is, when to evacuate, when to shelter in place and how to clean yourself following a chemical exposure and handle contaminated clothing.

MOSQUITOES AND HURRICANES

- Adult mosquitoes do not generally survive high winds during a hurricane.
- Immediately following a hurricane, flooding may occur. Mosquito eggs laid in the soil by floodwater mosquitoes during previous rain or floods hatch. This results in very large populations of floodwater mosquitoes. Most of these mosquitoes are considered nuisance mosquitoes.
- In general, nuisance mosquitoes do not spread viruses that make people sick. The types of mosquitoes that can spread viruses may increase 2 weeks to 2 months after a hurricane, especially in areas that did not flood but received more rainfall than usual.
- In areas with Aedes aegypti mosquitoes and local spread of Zika, chikungunya, or dengue, increased rainfall may result in increased hatching of Ae. aegypti eggs from water-holding containers. People may be at more risk of getting infected with these viruses, and they should take steps to protect themselves from mosquito bites.

- Because people spend more time outside cleaning up after a hurricane or flood, they are more likely to be bitten by nuisance mosquitoes. CDC does not expect to see a substantial increase in diseases spread by mosquitos, but CDC is not able to clearly predict if mosquito-borne diseases will increase in hurricane-affected areas. CDC continues to work with state and territorial health departments to monitor the situations and provide technical assistance as requested in areas impacted by recent hurricanes. CDC will share information with all its partners as it becomes available.
- Large numbers of nuisance mosquitoes can affect recovery efforts. For this reason, local or state mosquito control experts will often take steps to control these mosquitoes.
- Although flooding caused by hurricanes can be severe and an increase in mosquito populations is expected in the coming weeks, CDC does not expect to see a substantial increase in the number of people getting sick from diseases spread by mosquitoes. CDC will work closely with state and local health officials to monitor the situation and take action if necessary.

MOSQUITOES AFTER HURRICANES HARVEY, IRMA, AND MARIA

- Populations of mosquitoes are expected to increase in areas affected by the hurricanes, including Texas, Florida, Puerto Rico, and the US Virgin Islands (USVI).
- At this time, CDC has not received reports of an increase in mosquito-borne diseases in any of the hurricane-affected areas.
- No data are available on the impact of back-to-back hurricanes, but impact is not expected to differ from impact of one severe hurricane.
- CDC continues to work with state and territorial health departments to monitor the situations and provide technical assistance as requested in areas impacted by recent hurricanes. CDC will share information with all its partners as it becomes available.
- CDC is not able to predict if mosquito-borne diseases will increase in hurricane-affected areas.
    - Many areas in the United States have the type of mosquitoes that can become infected with and spread Zika, dengue, and chikungunya (*Ae. aegypti* and *Ae. albopictus*) and West Nile viruses (*Culex spp.*).
    - CDC will maintain and improve our ability to identify and test for Zika and other mosquito-borne diseases.

PREVENT MOSQUITO BITES

The best way to prevent diseases spread by mosquitoes is to protect yourself and your family from mosquito bites.

- Wear long-sleeved shirts and long pants.
- Stay in places with air conditioning and window and door screens to keep mosquitoes outside.

- Treat your clothing and gear with permethrin or buy pre-treated items (except in Puerto Rico, where permethrin is not effective).

Use Environmental Protection Agency (EPA)-registered insect repellents on exposed skin. Use a repellent with one of the following active ingredients: DEET, picaridin, IR3535, oil of lemon eucalyptus, para-menthane-diol, or 2-undecanone.

  - See EPA's search tool here.
  - Always follow the product label instructions.
  - Reapply insect repellent as directed.
  - Do not spray repellent on the skin under clothing.
  - If you are also using sunscreen, apply sunscreen first and insect repellent second.

For babies and children:

- Dress your child in clothing that covers arms and legs.
- Cover crib, stroller, and baby carrier with mosquito netting.
- See insect repellent recommendations for children below.

Take steps to control mosquitoes inside and outside your home

- After a hurricane or flood, the health department or mosquito control district will often take steps to reduce the mosquito population.
- Residents can take steps to help control mosquitoes in and around their homes to prevent mosquito bites.

DENGUE

- Dengue is a disease caused by any one of four closely related dengue viruses (DENV 1, DENV 2, DENV 3, or DENV 4).
- The viruses are spread to people through the bite of an infected mosquito.
- It is estimated that there are over 100 million cases of dengue worldwide each year.

Dengue after Hurricanes Harvey, Irma, and Maria:

- Before Hurricanes Harvey and Irma, there was no local spread of dengue spread by *Aedes* mosquitoes in Houston or Florida, or other areas affected by flooding.
- Locally spread Zika and dengue have been reported in Puerto Rico and USVI this year. Although the flooding caused by recent hurricanes is severe and we do expect to see an increase the mosquito population in the upcoming weeks, we do not expect to see cases of dengue appear in the affected areas because of the flooding.

WEST NILE

- West Nile is a virus most commonly spread to people by mosquito bites.
- In North America, cases of West Nile virus (WNV) occur during mosquito season, which starts in the summer and continues through fall.
- WNV cases have been reported in all of the continental United States.
- There are no vaccines to prevent or medications to treat WNV. Fortunately, most people infected with WNV do not have symptoms.
- About 1 in 5 people who are infected develop a fever and other symptoms.
- About 1 out of 150 infected people develop a serious, sometimes fatal, illness.
- Though pregnant women are not at higher risk for WNV infection, they should take steps to prevent mosquito bites.

West Nile after Hurricanes Harvey and Irma:

- Cases of West Nile virus have been reported in Texas and Florida this summer.
- Although the flooding caused by Hurricanes Harvey and Irma is severe and we do expect to see an increase the mosquito population in the upcoming weeks, West Nile virus cases are not expected to increase in the affected areas as a result of flooding.

ZIKA

- Zika is a virus spread mostly by the bite of an infected *Aedes* species mosquito (*Ae. aegypti* and *Ae. albopictus*).
- It can also be passed through sex without a condom with an infected person, even if that person does not show symptoms.
- If a pregnant woman is infected with Zika virus, it can be passed to her fetus and potentially cause birth defects, including microcephaly and other severe fetal brain defects.
- Many people infected with Zika virus won't have symptoms or will only have mild symptoms. For those who do have symptoms, they are usually mild and last for several days to a week.
- Signs and symptoms of Zika virus infection include fever, rash, headache, joint pain, conjunctivitis (red eyes), and muscle pain.
- No specific treatment is available for Zika virus disease.
- The best way to prevent Zika and other viruses spread by mosquitoes is to prevent mosquito bites.
- Condoms can reduce the chance of getting Zika from sex.
    - Not having sex eliminates the risk of getting Zika from sex.

Zika after Hurricanes Harvey, Irma, and Maria:

- Prior to Hurricanes Harvey, Irma, and Maria, Zika outbreaks had occurred throughout the Americas, and in the US territories, Puerto Rico and US Virgin Islands (USVI). Local spread of the virus had been reported in Texas and Florida. For more information, see Areas with Risk of Zika.
- The types of mosquitoes that spread Zika live in many areas of the United States, including Texas and Florida, and in the US territories, Puerto Rico and USVI.
- On June 2, 2017, the yellow area designation was removed for Miami-Dade County, Florida.
- As of August 29, 2017, CDC, in collaboration with the Texas Department of State Health Services, has updated guidance for people who travel to or live in Brownsville, Texas, to lift the Zika cautionary (yellow) area designation.
- Although the level of risk of Zika virus transmission after a yellow area is removed is not known, it is likely to be low. However, sporadic cases may still occur.
- For this reason, CDC recommends that people living in or traveling to Miami-Dade County, Brownsville, Texas, Puerto Rico, and USVI continue to protect themselves from mosquito-borne illnesses, including Zika virus.
- After the designations were lifted in these areas, before Hurricanes Harvey and Irma, there was no local spread of Zika spread by *Aedes* mosquitoes in Houston or Florida, or other areas in the continental United States affected by flooding. However, in 2017, local spread has been occurring in Puerto Rico and USVI.
- Continental US states: Although the flooding caused by the hurricanes is severe and we do expect to see an increase the mosquito population in the upcoming weeks, we do not expect to see cases of Zika appear in affected areas because of the flooding.

TEXAS

- Hurricane Harvey made landfall along the Middle Texas Coast on August 25, 2017.
- Brownsville, Texas was previously designated as a Zika cautionary (yellow) area, but that designation was lifted on August 29, 2017. This means that there are no longer any travel recommendations related to Zika virus for Brownsville. However, sporadic cases may still occur in Brownsville or the surrounding areas (e.g., Lower Rio Grande Valley). For this reason, CDC recommends that people living in or traveling to Brownsville and the southernmost areas of the state continue to protect themselves from mosquito-borne illnesses, including Zika virus.
- The Texas Department of State Health Services is working with counties that have requested mosquito control assistance to coordinate spraying.
- Updates on mosquito control in Texas can be found at: http://dshs.texas.gov/news/releases/2017/20170906.aspx

FLORIDA

- Hurricane Irma made landfall in the lower Florida Keys on September 10, 2017.

- Miami-Dade County was previously designated as a Zika cautionary (yellow) area, but that designation was removed on June 2, 2017. This means that there are no longer any travel recommendations related to Zika virus for Miami-Dade County, Florida. Although the level of risk of Zika virus transmission after a yellow area is removed is not known, it is likely to be low. However, sporadic cases may still occur. For this reason, CDC recommends that people living in or traveling to Miami-Dade County continue to protect themselves from mosquito-borne illnesses, including Zika virus.
- Mosquito control activities including spraying are occurring in South Florida.

US TERRITORIES

- Puerto Rico and USVI have the type of mosquitoes that can become infected with and spread Zika, dengue, and chikungunya (*Ae. aegypti* and *Ae. albopictus*).
- CDC will continue to work with the Puerto Rico and USVI departments of health as requested.
- Puerto Rico did not see a significant increase in dengue cases after Hurricane Georges in 1998.
- Central America also did not see a significant increase in dengue cases after Hurricane Mitch in 1998.

PUERTO RICO

- Hurricane Irma and Hurricane Maria caused widespread flooding and devastation in Puerto Rico in September, 2017.
- Locally spread cases of Zika and dengue have been reported in Puerto Rico this year.
- No cases of chikungunya have been reported in 2017.
- Puerto Rico did not spray for nuisance mosquitoes or for mosquitoes that spread diseases (like *Ae. aegypti*) after Hurricane Irma.
- CDC is not aware if Puerto Rico will spray for nuisance mosquitoes or for mosquitoes that spread diseases (like *Ae. aegypti*) after Hurricane Maria.

US VIRGIN ISLANDS

- Hurricane Irma and Hurricane Maria caused widespread flooding and devastation in the US Virgin Islands in September, 2017.
- Local cases of Zika and dengue have been reported in USVI in 2017.
- No cases of chikungunya have been reported in 2017.
- USVI did not spray for nuisance mosquitoes or for mosquitoes that spread diseases (like *Ae. aegypti*) after Hurricane Irma.

For more information about Zika virus, click here: https://www.cdc.gov/zika/about/index.html

For more information about Zika virus and pregnancy, click here: https://www.cdc.gov/zika/pregnancy/index.html

For more information about Zika virus prevention, click here:
https://www.cdc.gov/zika/prevention/index.html

PREVENT INJURY AFTER A DISASTER

PREVENT CARBON MONOXIDE POISONING

Carbon monoxide (CO) is an odorless, colorless gas that can cause sudden illness and death if inhaled.

When power outages occur during emergencies such as hurricanes or winter storms, the use of alternative sources of fuel or electricity for heating, cooling, or cooking can cause CO to build up in a home, garage, or camper and to poison the people and animals inside.

Every year, more than 400 people die in the U. S. from accidental CO poisoning.

Exposure to CO can cause loss of consciousness and death. The most common symptoms of CO poisoning are headache, dizziness, weakness, nausea, vomiting, chest pain, and confusion. People who are sleeping or who have been drinking alcohol can die from CO poisoning before ever having symptoms.

Important CO Poisoning Prevention Tips

- Never use a generator, pressure washer, or any gasoline-powered engine inside your home, basement, or garage or less than 20 feet from any window, door, or vent of your home or your neighbor's home.
- When using a generator, use a battery-powered or battery backup CO detector in your home.
- Never use a gas range or oven to heat a home.
- Never leave the motor running in a vehicle parked in an enclosed or partially enclosed space, such as a garage.
- Never run a generator, pressure washer, or any gasoline-powered engine inside a basement, garage, or other enclosed structure, even if the doors or windows are open, unless the equipment is professionally installed and vented. Keep vents and flues free of debris, especially if winds are high. Flying debris can block ventilation lines.
- Never use a charcoal grill, hibachi, lantern, or portable camping stove inside a home, tent, or camper.
- If conditions are too hot or too cold, seek shelter with friends or at a community shelter.
- If CO poisoning is suspected, move to outside air, call 911 or your local Poison Control Center at 1-800-222-1222 or consult a health care professional right away.

Businesses can help ensure your customers' safety by placing important information about protecting oneself from CO poisoning in the direct vicinity of generators they are selling.

Employers, workers and volunteers can find additional resources on this topic in the NIOSH Key Messages document also available at https://www.cdc.gov/disasters/hurricanes/index.html

ANIMAL HAZARDS

Avoid Wild or Stray Animals

- Call local authorities to handle animals.
- Secure all food sources and remove any animal carcasses to avoid attracting rats.
- Get rid of dead animals, according to guidelines from your local animal control authority, as soon as you can. See Animal Disposal for answers to frequently asked questions.
- For more information, contact your local animal shelter or services, a veterinarian, or the Humane Society for advice on dealing with pets or stray or wild animals after an emergency.

Prevent Contact with Rodents

After a disaster, surviving rodents often relocate to new areas in search of food, water, and shelter.

Removing food sources, water, and items that provide shelter for rodents is the best way to prevent contact with rodents. Where necessary, control rodents by using an integrated pest management approach that includes environmental sanitation, proper food storage, rodent-proofing, trapping, and poisoning.

Inside the Home

- Keep food and water covered and stored in rodent-proof containers. A rodent-proof container is made of thick plastic, glass, or metal and has a tight-fitting lid.
- Keep pet food covered and stored in rodent-proof containers. Allow pets only enough food for each meal, then store or throw out any remaining food. Do not leave excess pet food or water out overnight.
- Dispose of garbage on a frequent and regular basis. If storing trash and food waste inside the home, do so in rodent-proof containers.
- Wash dishes, pans, and cooking utensils immediately after use.
- Remove leftover food and clean up any spilled food from cooking and eating areas.
- Do not store empty cans or other opened containers with food residues inside the home.
- When possible, use spring-loaded traps in the home and outside buildings. Use a small amount of chunky peanut butter or other available food as bait. (Remember – you are more likely to be successful trapping rodents if your home is free of other easily accessible food items.) Place

traps in a "T" shape against baseboards or wall surfaces where rodent rub marks, droppings, or rodents have been seen. Keep children and pets away from areas where traps are placed.

- Glue traps and live traps are not recommended. Glue traps mainly catch juvenile rodents, not breeding adults. Rodents caught in live traps and released will likely reenter the home.

Outside the Home

- Dispose of debris and trash as soon as possible. Store woodpiles and stacks of lumber or other materials at least 12 inches above the ground and as far away from the home as possible.
- Store garbage in rodent-proof containers with tight fitting lids.
- Store grains and animal feed in rodent-proof containers.
- Remove any food sources, including animal carcasses, that might attract rodents.
- Haul away trash, abandoned vehicles, discarded tires, and other items that might serve as rodent nesting sites.
- Keep grass short and cut or remove brush and dense shrubbery that may provide rodents cover and protection.
- Trim tree limbs or shrubs that overhang or touch buildings.
- Place spring-loaded traps in outbuildings and in other areas where signs of rodents are found. Do not allow children or pets to play near spring traps.

Rodent-Proofing Your Home

Rats can enter the home through a hole the size of a quarter. Mice can enter through a hole the size of a dime. Seal gaps and holes inside and outside the home that are greater than a ¼-inch diameter with any of the following materials:

- Cement or cement mortar,
- 19-gauge or greater metal mesh, wire screening, or hardware cloth (1/4-inch or less spacing is preferred),
- steel wool,
- heavy-duty caulk or elastomeric sealant, or
- expanding foam.

For more information about controlling rodent exposure after a disaster, visit https://www.cdc.gov/disasters/rodents.html

For more information about Integrated Pest Management, visit https://www.cdc.gov/nceh/ehs/docs/factsheets/What_Is_Integrated_Pest_Management.pdf

Prevent or Respond to a Snake Bite

- Be aware of snakes that may be swimming in the water to get to higher ground and those that may be hiding under debris or other objects.
- If you see a snake, back away from it slowly and do not touch it.
- If you or someone you know are bitten, try to see and remember the color and shape of the snake, which can help with treatment of the snake bite.
- Keep the bitten person still and calm. This can slow down the spread of venom if the snake is poisonous. Seek medical attention as soon as possible. Dial 911 or call local Emergency Medical Services. Poison Control Centers can also be a source of help and can be reached at 1-800-222-1222. Apply first aid if you cannot get the person to the hospital right away. Lay or sit the person down with the bite below the level of the heart.
    - Tell him/her to stay calm and still.
    - Cover the bite with a clean, dry dressing.

Rabies:

The most important source of rabies in humans is from uncontrolled rabies in dogs. Mongooses can also transmit rabies to humans, as well as other mammals like cats, bats, and livestock.

Rabies is transmitted through saliva and brain/nervous system tissue of an infected animal, when it is in contact with a person's bite wound, open cuts in skin or mucous membranes (mouth, eyes). Petting or handling an animal, or contact with animal blood, urine or feces does not transmit rabies.

Rabies in humans is 100% preventable through prompt appropriate medical care. If a dog, mongoose or other animal bites you…

- Wash any wounds immediately with soap and water.
- See your doctor for medical attention. You may be given a post exposure anti-rabies vaccination.
- Report the bite to your doctor and the local department of health.
- If a domestic dog, cat, or ferret bit you, the animal should be confined and observed for 10 days.
- Any illness in the animal during the confinement period should be evaluated by a veterinarian and reported immediately to the local public health department.

For more information about rabies, visit www.cdc.gov/rabies.

Plague:

There are reports that floodwaters bring a danger of plague. This is FALSE. Plague is rare in the United States. It is spread through fleas, not floodwater. CDC is not expecting to see an increased risk of plague from Hurricane Harvey. To learn more about plague, visit https://www.cdc.gov/plague/

POWER OUTAGES AND ELECTRICAL DANGERS

- NEVER touch a fallen power line. Call the power company to report fallen power lines.
- Do not walk or drive through standing water if downed power lines are in the water.
- If you believe someone has been electrocuted, call or have someone else call 911 or emergency medical help.
- After a hurricane, flood or other natural disaster you need to be careful to avoid electrical hazards both in your home and elsewhere.
- Avoid contact with overhead power lines during cleanup and other activities.

If a power line falls across your car while you are driving, stay inside the vehicle and continue to drive away from the line.

- If the engine stalls, do not turn off the ignition.
- Warn people not to touch the car or the line.
- Call or ask someone to call the local utility company and emergency services.
- Do not allow anyone other than emergency personnel to approach your vehicle.

If electrical circuits and electrical equipment have gotten wet or are in or near water, turn off the power at the main breaker or fuse on the service panel.

- Do not enter standing water to access the main power switch.
- Call an electrician to turn it off.

Never turn power on or off yourself or use an electric tool or appliance while standing in water.

- Do not turn the power back on until electrical equipment has been inspected by a qualified electrician.
- All electrical equipment and appliances must be completely dry before returning them to service.
- Have a certified electrician check these items if there is any question.

If you see frayed wiring or sparks when you restore power, or if there is an odor of something burning but no visible fire, you should immediately shut off the electrical system at the main circuit breaker.

Consult your utility company about using electrical equipment, including power generators.

- Do not connect generators to your home's electrical circuits without the approved, automatic-interrupt devices.
- If a generator is on line when electrical service is restored, it can become a major fire hazard and it may endanger line workers helping to restore power in your area.

If you believe someone has had electric shock take the following steps:

- Look first. Don't touch. The person may still be in contact with the electrical source. Touching the person may pass the current through you.
- Call or have someone else call 911 or emergency medical help.
- Turn off the source of electricity if possible. If not, move the source away from you and the affected person using a non-conducting object made of cardboard, plastic or wood.
- Once the person is free of the source of electricity, check the person's breathing and pulse. If either has stopped or seems dangerously slow or shallow, begin cardiopulmonary resuscitation (CPR) immediately.
- If the person is faint or pale or shows other signs of shock, lay him or her down with the head slightly lower than the trunk of the body and the legs elevated.
- Don't touch burns, break blisters, or remove burned clothing. Electrical shock may cause burns inside the body, so be sure the person is taken to a doctor.

Employers, workers and volunteers can find additional resources on electrocution in the NIOSH Key Messages document also available at https://www.cdc.gov/disasters/hurricanes/index.html.

CHAINSAW SAFETY

Stay safe while using a chainsaw.

- Wear proper protective clothing and glasses.
- Choose the proper size of chain saw to match the job.
- Operate, adjust, and maintain the saw according to manufacturer's instructions.
- Take extra care in cutting "spring poles" trees or branches that have been bent, twisted, hung up on, or caught under another object during a high wind.
- Be sure that bystanders are at a safe distance from cutting activities.
- Check around the tree or pole for hazards, such as nails, power lines, or cables, before cutting.

LANDSLIDES AND MUDSLIDES

- Landslides occur when masses of rock, earth, or debris move down a slope.
- Debris flows, also known as mudslides, are a common type of fast-moving landslide that tends to flow in channels.
- Landslides are caused by disturbances in the natural stability of a slope. They can accompany heavy rains or follow droughts, earthquakes, or volcanic eruptions.
- Mudslides develop when water rapidly accumulates in the ground and results in a surge of water-saturated rock, earth, and debris. Mudslides usually start on steep slopes and can be activated by natural disasters.

- Areas where wildfires or human modification of the land have destroyed vegetation on slopes are particularly vulnerable to landslides during and after heavy rains.

Health threats from landslides and debris flows

In the United States, landslides and debris flows result in 25 to 50 deaths each year. The health hazards associated with landslides and mudflows include:

- Rapidly moving water and debris that can lead to trauma;
- Broken electrical, water, gas, and sewage lines that can result in injury or illness; and
- Disrupted roadways and railways that can endanger motorists and disrupt transport and access to health care.

Some areas are more likely to experience landslides or mudflows, including:

- Areas where wildfires or human modification of the land have destroyed vegetation;
- Areas where landslides have occurred before;
- Steep slopes and areas at the bottom of slopes or canyons;
- Slopes that have been altered for construction of buildings and roads;
- Channels along a stream or river; and
- Areas where surface runoff is directed.

What you can do to protect yourself

Before intense storms and rainfall

- Assume that steep slopes and areas burned by wildfires are vulnerable to landslides and debris flows.
- Learn whether landslides or debris flows have occurred previously in your area by contacting local authorities, a county geologist or the county planning department, state geological surveys or departments of natural resources, or university departments of geology.
- Contact local authorities about emergency and evacuation plans.
- Develop emergency and evacuation plans for your family and business.
- Develop an emergency communication plan in case family members are separated.
- If you live in an area vulnerable to landslides, consider leaving it.

During intense storms and rainfall

- Listen to the radio or watch TV for warnings about intense rainfall or for information and instructions from local officials.

- Be aware of any sudden increase or decrease in water level on a stream or creek that might indicate debris flow upstream. A trickle of flowing mud may precede a larger flow.
- Look for tilted trees, telephone poles, fences, or walls, and for new holes or bare spots on hillsides.
- Listen for rumbling sounds that might indicate an approaching landslide or mudflow.
- Be alert when driving. Roads may become blocked or closed due to collapsed pavement or debris.
- If landslide or debris flow danger is imminent, quickly move away from the path of the slide. Getting out of the path of a debris flow is your best protection. Move to the nearest high ground in a direction away from the path. If rocks and debris are approaching, run for the nearest shelter and take cover (if possible, under a desk, table, or other piece of sturdy furniture).

After a landslide or debris flow

- Stay away from the site. Flooding or additional slides may occur after a landslide or mudflow.
- Check for injured or trapped people near the affected area, if it is possible to do so without entering the path of the landslide or mudflow.
- Listen to the radio or TV for emergency information.
- Report broken utility lines to the appropriate authorities.
- Consult a geotechnical expert (a registered professional engineer with soils engineering expertise) for advice on reducing additional landslide problems and risks. Local authorities should be able to tell you how to contact a geotechnical expert.

COPING WITH DISASTER

SAMHSA's Disaster Distress Hotline: 1-800-985-5990 (Deaf/hearing impaired can use your preferred relay service to call 1-800-985-5990) or text TalkWithUs to 66746

It is natural to feel stress, anxiety, grief, and worry during and after a disaster. Everyone will react differently and your own feelings will change throughout the emergency response. Notice and accept how you feel. Taking care of your emotional health during an emergency will help you think clearly and react to the urgent needs to protect yourself and your family during an emergency. Self-care during an emergency will help your long-term healing.

Look out for these common signs of distress:

- Feelings of shock, numbness, and disbelief
- Changes in energy and activity levels
- Difficulty concentrating
- Changes in appetite

- Sleeping problems
- Nightmares and upsetting thoughts and images
- Feeling anxious or fearful
- Physical reactions, such as headaches, body pains, stomach problems, and skin rashes
- Chronic health problems can get worse
- Changes in use of alcohol, tobacco, or other drugs
- Anger or short-temper

If you experience these feelings or behaviors for several days in a row and are unable to carry out normal responsibilities because of them, seek professional help.

Take the following steps to cope with a disaster:

- Stay informed-When you feel that you are missing information, you may become more stressed or anxious. Watch, listen to, or read the news for updates from officials. Be aware that there may be rumors during a crisis. Turn to reliable sources of information.
- Take care of your body. Eat healthy well-balanced meals, exercise regularly, get plenty of sleep, and avoid alcohol, tobacco and other drugs. Learn more about wellness strategies for mental health.
- Take breaks- Make time to unwind and remind yourself that strong feelings will fade. Take breaks from watching, reading, or listening to news stories. It can be upsetting to hear about the crisis and see images repeatedly. Try to do some other activities you enjoy to return to your normal life and check for updates between breaks.
- Connect with others- Share your concerns and how you are feeling with a friend or family member. Maintain healthy relationships and build a strong support system.
- **Seek help when needed-** If distress is impacting activities of your daily life for several days or weeks, talk to a clergy member, counselor, or doctor or contact the **SAMHSA helpline**.
    - Call 1-800-985-5990 ; Deaf/hearing impaired can use your preferred relay service to call 1-800-985-5990
    - Text TalkWithUs to 66746.
    - Spanish speakers in the US can call 1-800-985-5990 or text HABLANOS to 66746.
    - Spanish speakers in Puerto Rico or the US Virgin Islands can call or text HABLANOS to 1-212-461-4635.

Employers, workers and volunteers can find additional resources on this topic in the NIOSH Key Messages document also available at https://www.cdc.gov/disasters/hurricanes/index.html.

HELPING CHILDREN COPE

Helping Children Cope

Children and youth may also have a difficult time during or after an emergency. Some young people react right away, while others may show signs of difficulty much later. Take time to talk to your children about the disaster, limit their exposure to media coverage of the event, including social media, and as soon as possible, return to and maintain a healthy routine.

SAMHSA guide for parents, caregivers, and teachers

Children may not say how they are feeling during a crisis. Explain the situation, answer questions, and reassure them they are loved.

Children are less likely to say that they are feeling stressed but will show signs through their behaviors. Infants and young children may cry more than usual, want to be held more, and become fearful about being separated from their parent/caregiver. Adolescents and teenagers may deny that they are upset or may do more risky things.

The following are some ways to help children cope:

- Set a good example. Take care of yourself, including exercising and practicing healthy eating habits.
- Encourage children to ask questions. Get down at eye level and speak in a calm, gentle voice using words they can understand.
- Maintain a strong connection and show them they are loved.
- Listen for any rumors children might hear at school or on social media and help explain the correct information to them.
- Tell children it is normal to be upset. Let them know that it's not their fault.

FEELINGS OF DEPRESSION OR SUICIDAL THOUGHTS

After a natural disaster, it is normal to feel sad, mad, or guilty—you may have lost a great deal. Your coping skills may change during periods of crisis and heightened stress, limiting your normal ability to effectively solve problems and cope. Stay in touch with family and friends, find a support network, and talk with a counselor. Getting involved with others can help.

If you or someone you know feels like completely giving up or are having thoughts of suicide, get help. Contact the National Suicide Prevention Lifeline: 1-800-273-TALK (1-800-273-8255) or use the online Lifeline Crisis Chat. If you are calling from Puerto Rico, call the Emergency Primera Ayuda Sicosocial (PAS) line at 1-800-981-0023. Both are free and confidential. You will be connected to a skilled, trained counselor in your area. For more information, visit the National Suicide Prevention Lifeline.

IMMUNIZATIONS

RECOMMENDATIONS FOLLOWING DISASTER

Interim Immunization Recommendations for Individuals Displaced by a Disaster are available at https://www.cdc.gov/disasters/disease/vaccrecdisplaced.html

The purpose of these recommendations are two-fold:

1. To ensure that children, adolescents, and adults are protected against vaccine-preventable diseases in accordance with current recommendations. Paper immunization records are unlikely to be available for a large number of adult and child evacuees. Use of immunization information system (IIS) may be an important tool for healthcare providers. It is important that immunizations are kept current if possible.
2. To reduce the likelihood of outbreaks of vaccine-preventable diseases in large crowded group settings.

Easy to read schedules of routinely recommended immunization are available at https://www.cdc.gov/vaccines/schedules/easy-to-read/index.html

Immunizations for Crowded Group Settings:

In addition to the vaccines given routinely as part of the child, adolescent, and adult schedules, the following vaccines should be given to evacuees living in crowded group settings, unless the person has written documentation of having already received them:

- Influenza: everyone 6 months of age or older should receive influenza vaccine. For additional information see (MMWR 2017 Aug 25;66[2]:1-20).
- Varicella: everyone 12 months of age or older should receive one dose of this vaccine unless they have a documented record of immunization or documentation of health care provider diagnosis of chickenpox or shingles.
- MMR: everyone 12 months of age or older and born during or after 1957 should receive one dose of this vaccine unless they have a documented record of 2 doses of MMR or other evidence of immunity.

The following vaccines should not routinely be necessary for evacuees living in crowded group settings, unless otherwise indicated:

- Hepatitis A: Although hepatitis A vaccine is recommended for all children in the U.S. aged 12-23 months, evacuation itself is not a specific indication for hepatitis A vaccination of previously unvaccinated children per se unless exposure to hepatitis A virus is suspected. Persons who evacuate their homes under orderly conditions at the advisement of state or local officials to a congregate setting where sanitary conditions prevail should not require hepatitis A vaccine, unless they have been evacuated from an area where exposure to hepatitis A virus is likely or have been exposed to persons with suspected or proven hepatitis A infection.

Immunocompromised individuals, such as persons with severe immunosuppression associated with HIV infection, pregnant women, and those on systemic steroids or other immunosuppressive medications, should not receive the live viral vaccines, varicella and MMR. Screening should be performed by self-report.

Employers, workers and volunteers can find additional resources on medical recommendations in the NIOSH Key Messages document also available at https://www.cdc.gov/disasters/hurricanes/index.html.

IMPACT OF POWER OUTAGE ON VACCINE STORAGE

In areas where vaccine supplies are affected by temporary power outages, the guidance developed for providers during the 2003 Northeast Power Outage may be helpful:

- Do not open freezers and refrigerators until power is restored.
- Most refrigerated vaccines are relatively stable at room temperature for limited periods of time. The vaccines of most concern are MMR and Varivax, which are sensitive to elevated temperatures.
- Monitor temperatures; don't discard vaccines that are in refrigerators or freezers affected by temporary power outages; don't administer affected vaccines until you have discussed with public health authorities.

If the power outage is ongoing:

- Keep all refrigerators and freezers closed. This will help to conserve the cold mass of the vaccines.
- Continue to monitor temperatures if possible. Do not open units to check temperatures during the power outage. Instead, record the temperature as soon as possible after the power is restored, and the duration of the outage. This will provide data on the maximum temperature and maximum duration of exposures to elevated temperatures.
- If alternative storage with reliable power sources are available (i.e., hospital with generator power), transfer to that facility can be considered. If transporting vaccine, measure the temperature of the refrigerator(s) and freezer(s) when the vaccines are removed. If possible

transport the vaccine following proper cold chain procedures for storage and handling or try to record the temperature the vaccine is exposed to during transport.

When power has been restored:

1. Record the temperature in the unit as soon as possible after power has been restored. Continue to monitor the temperatures until they reach the normal 2–8 degrees Celsius range in the refrigerator, or -15 degrees C or less in the freezer. Be sure to record the duration of increased temperature exposure and the maximum temperature observed.
2. If you receive vaccine from your state or local health department, they may be contacting you with guidance on collecting information on vaccine exposed to extreme temperatures.
3. If you are concerned about the exposure or efficacy of any of your vaccine stock, do not administer the vaccine until you have consulted your state or local health department.
4. Keep exposed vaccine separated from any new product you receive and continue to store at the proper temperature if possible.
5. Do not discard any vaccine that might have been exposed to increased or fluctuating temperatures. We will be working with the vaccine manufacturers to determine which vaccines may be viable.

For additional information about vaccine storage during a power outage, see the guidance provided by the CDC National Immunization Program or contact your state or local health department.

VULNERABLE GROUPS

PREGNANT WOMEN

After a hurricane many people are affected, here are some tips on how to protect yourself and your baby.

If you do get sick, talk with a healthcare provider right away.

- Explain that you are pregnant or think you might be pregnant.
- Some infections might harm your growing baby. The sooner you get the care you need, the better.
- While you are sick, drink plenty of clean water and follow the doctor or healthcare provider's orders.
- Drinking lots of clean water and resting is very important for all pregnant women, especially when they are sick.

Before you start taking any medicines, even ones that you can buy at the store, talk with a healthcare provider.

- Make sure to tell the doctor or nurse that you are pregnant or might be pregnant.
- Some medicines are not good for women to take when they are pregnant, but others are okay.
- **Continue taking your multivitamins with 400 micrograms of folic acid every day to help keep you and your unborn baby in good health.**
- **Vaccination helps protect women during pregnancy and protects the baby for several months after birth. CDC recommends getting the whooping cough and flu shots during pregnancy to protect yourself and your developing baby against serious diseases.**
- If you are already taking a medicine, talk to your doctor or healthcare provider before stopping the medicine.

To prevent carbon monoxide poisoning, do not use generators, kerosene heaters, grills, or camp stoves indoors.

- **Never use a generator, pressure washer, or any gasoline-powered engine inside your home, basement, or garage or less than 20 feet from any window, door, or vent.**
- **Carbon monoxide is a gas with no color or smell. It is a poison to you and your baby. If you breathe it, it can make you very sick. It can even kill you. Carbon monoxide is a poison for anyone, whether pregnant or not.**
- When using a generator, use a battery-powered or battery backup carbon monoxide detector in your home.
- If you've breathed carbon monoxide, you might feel like throwing up or feel very tired.
- If you are having problems and think you were exposed to carbon monoxide, you should tell a doctor or nurse.

If possible, do not touch or walk in flood water.

- If you do touch the water, make sure to use soap and clean water to wash the parts of your body that came in contact with the water.
- Do not swallow any of the flood water and be careful to keep it away from your mouth.
- If you feel sick in any way, talk to a doctor or nurse right away.
- Remember to explain that you are pregnant or think you might be pregnant.

If you are pregnant, you should follow steps to prevent mosquito bites to reduce your risk for illnesses spread by mosquitoes.

- Wear long-sleeved shirts and long pants.
- Stay and sleep in places with air conditioning or that use window and door screens.
- Use EPA-registered insect repellents with one of the following active ingredients:
- DEET, picaridin, IR3535, oil of lemon eucalyptus, para-menthane-diol, or 2-undecanone
- Once a week, empty and scrub, turn over, cover, or throw out items that hold water, such as trash containers, tires, buckets, toys, planters, flowerpots, birdbaths or pools.

Stress can cause problems like having your baby come too soon or having a baby that is under weight. It is important to choose healthy ways to deal with your stress.

- Understand that the stress you are feeling is normal.
- Get plenty of rest – it is important for you and your baby.
- Find healthy ways to relax. Taking just a few minutes a couple times during the day to close your eyes in a quiet place can help. Reading, listening to music, or writing in a journal can also help you to relax.
- Avoid the urge to drink alcohol, smoke or take drugs as ways of coping with stress.
- Talk to friends, family members, or clergy for comfort and share your experiences and feelings with them.
- If you feel like you can't deal with your stress or that your friends or family can't help, talk to a counselor, doctor or nurse.

For more information about what you have read on this form please call Mother to Baby at 1-866-626-6847.

POSTPARTUM WOMEN

Postpartum women may face unique challenges and medical needs during and after a disaster. You can take the following steps to protect yourself and your baby.

- **Take special care of your body after giving birth and while breastfeeding. Learn more about steps for recovering from birth.**
- **Get a postpartum checkup within 6 weeks after having your baby, even if it is not with your usual doctor.**

- **Get your vaccines, like the flu shot, if you did not receive it before or during your pregnancy.**
- **See a doctor or other healthcare provider for well-baby checkups or if you are concerned about a health problem, even if it is not with your baby's usual doctor. Learn more about newborn care and safety.**
- **Postpartum depression can occur after having a baby, however, it is treatable and most women get better with treatment. To help relieve emotional stress, talk to a healthcare provider, friend, or family member about your concerns and feelings.**
- **If you are not ready to get pregnant again, you can ask for several months' supply of the pill, patch, or ring or consider using a birth control method that will prevent pregnancy for several months.**

BREASTFEEDING MOTHERS

Breastfeeding is recommended for optimal infant nutrition. Breastfeeding remains the best infant feeding option in a natural disaster situation. Even when experiencing diarrhea, food-borne illness, or extreme stress, breastfeeding mothers continue to produce ample milk for their babies.

Women and health professionals who need additional information about the effects of exposures, such as stress, related to a disaster on pregnancy or breastfeeding can call the Organization of Teratology Information Specialists (OTIS) at 1-866-626-OTIS or 1-866-626-6847.

INFANTS

If you are away from your home, there are steps you can take to help your baby sleep safely. To reduce the risk of sudden infant death syndrome (also known as SIDS) and other sleep-related causes of infant death, take the following actions:

- Place your baby on his or her back for all sleep times—for naps and at night.
- Use a firm sleep surface designed for babies, such as a mattress in a safety-approved crib or portable crib, covered by a fitted sheet.
- Have the baby share your room, not your bed. Your baby should not sleep on an adult bed, cot, air mattress or couch, or on a chair alone, with you, or with anyone else.
- Keep soft objects, such as pillows and loose bedding, out of your baby's sleep area.
- Do not smoke or allow smoking around your baby.
- Keep any available medical and immunization records with you, if possible.

- Infants are among those most at risk from exposure to air pollution, but everyone can experience effects like eye, lung or throat irritation.
- Infants and young children may cry more than usual, want to be held more, and become fearful about being separated from their parent/caregiver.
- See 'Feeding Infants and Young Children' section above in 'Food' section for safe feeding tips.

CHILDREN

- Children may be very frightened and need help coping after a storm.
- After a storm, help children to understand that they are safe and secure by talking, playing and doing other family activities with them.
- Visit nctsn.org/trauma-types/natural-disasters for more ideas on how to reassure children they are safe after a major storm.
- Use tips to keep children safe in the aftermath. **Children should not take part in disaster cleanup work. Do not use N-95 respirators on children. N-95 respirators do not fit children and will not protect them.**
- Prevent children from playing in or around floodwaters. It doesn't take long or much water for children to drown. Learn more online at www.ready.gov/floods.
- Talk to your children about where you are evacuating, explain that you are doing so to keep them safe
- If you are evacuating, make sure you take your and your family's meds
- If you are separated from your child, make sure he or she knows how to get in touch with you
- Make sure your child's emergency contact info is up to date with their school
- Floods pose special danger to children. Watch for dangerous situations and learn how to keep kids safe.
- Never leave young children alone or allow them to play in damaged buildings or in areas that might be unsafe.
- Young children may cry more than usual, want to be held more, and become fearful about being separated from their parent/caregiver.
- Children may be afraid to sleep alone and may want to sleep with a parent or another person. Be as flexible as you can.
- Children will feel more secure if you can stick to a routine as much as possible - eat/sleep at the same time as always.
- Make sure flood-damaged surfaces are disinfected to protect your children from exposure to toxins.
- Some children may be quiet or withdrawn. Others may become upset easily, cry frequently, and/or become angry. Encourage children to talk.

- Children with special health care needs such as autism spectrum disorder may have difficulties with changes in routine - help them anticipate changes/tell them what might happen. It may be helpful to use stories.
- Parents spending much of their time cleaning up and/or rebuilding their lives and homes may cause children to feel neglected. Involve them. This will build life skills.
- Keep any available medical and immunization records with you, if possible.
- Children are among those most at risk from exposure to air pollution, but everyone can experience effects like eye, lung or throat irritation.
- See 'Feeding Infants and Young Children' section above in 'Food' section for safe feeding tips.

OLDER ADULTS

Keep a list of medications, vaccination records, allergies, special equipment such as oxygen, hearing aids, etc., names and numbers of doctors, pharmacists and family members along with eyeglasses, medications and walking aids, such as a cane or walker. Have these items ready to take with you if you need to evacuate.

Friends, family and neighbors should check on older adults to make sure they are okay and getting the assistance they need.

Older adults physiologically do not adjust as well as well as young people to sudden changes in temperature. They are more likely to have chronic medical conditions and take prescription medicines that affect the body's ability to control its temperature or sweat.

Planning considerations when preparing for and protecting older adults in an emergency.

- Use shelter intake procedures to identify vulnerable older adults; the shelter intake process can be an effective way for emergency management officials to identify older adults in the community who may need special assistance due to a physical or cognitive impairment.
- Capture information on older adults in shelters: demographics including reliance on caregivers, prevalence of chronic conditions including dementia and Alzheimer's disease, functional and access needs, and proportion that rely on services through organizations for independence.
- Shelter facilities should meet the needs of this population, such as accessible to people who need help or certain accommodations to perform routine care or activities of daily living (e.g., to use the bathroom, bathe, dress, groom, or get into and out of bed), accessible to people who have certain disabilities, such as those who use a wheelchair or walker, and include signs and other forms of communication that can be understood by older adults.

More resources:

https://www.cdc.gov/phpr/documents/aging.pdf

https://www.cdc.gov/aging/emergency/planning_tools/planning_guides.htm

https://www.cdc.gov/disasters/extremeheat/older-adults-heat.html

PEOPLE WITH DISABILITIES

Emergency plans should be tailored to meet specific needs. If you have a disability, it may require extra planning to handle an emergency. A good plan may include family, friends, neighbors, and organizations that support people with disabilities and can help make decisions.
https://www.cdc.gov/ncbddd/disabilityandhealth/emergency-tools.html

Children with disabilities sometimes have added challenges during an emergency situation compared to children without disabilities.

- Children with disabilities may have a hard time moving from one location to another, have difficulty communicating, or have trouble adjusting to different situations.
- Additional information about emergency planning for children with disabilities is found at: https://www.cdc.gov/ncbddd/disabilityandsafety/emergency.html

Here are some additional tips for people with disabilities and their caregivers:

- Make sure those who take medications keep an adequate supply on hand, and copies of their prescriptions.
- People who need power for medical or other assistive devices should keep extra sets of batteries, and consider a generator for home use if a power outage may jeopardize health or safety.
- People with dietary needs should have an emergency food supply.
- Those who are deaf or hard of hearing must be able to receive emergency alerts and warnings in an accessible form.
- The law requires that service dogs should be admitted to shelters during emergencies.
    - Include your service animal in your emergency plan. Make sure your emergency kit includes food and other items for service animals.
    - Work with local emergency management to ensure that they are prepared to receive service animals.

- Helping someone in wheelchair? They may be able to transfer themselves. Be respectful of their independence.
- A car battery can charge an electric wheelchair during power outage. More tips for people with disabilities.
- If someone is helping you shelter because you have a disability, explain how they can best assist you.

- Always ask a person with a disability how you can best assist them to shelter or cope.
- Children and adults with autism spectrum disorder may have difficulties with changes in routine - help them anticipate changes/tell them what might happen. It may be helpful to use stories.

PEOPLE WITH CHRONIC ILLNESS

HHS's Emergency Prescription Assistance Program has been activated in Puerto Rico and the U.S. Virgin Islands. It is a free service that helps residents get medicine, medical supplies, medical equipment and vaccines that were lost, stolen, or damaged due to the disaster. To enroll, call 855-793-7470 or visit www.PHE.gov/EPAP

Diabetes

If you are living with diabetes or have a loved one with the disease, follow these tips after an emergency.

- It may be hard to find the food that you usually eat. Try to choose foods that are lower in carbohydrates (sugar) and salt, if possible.
- Try to test your blood sugar often to make sure it's in the target range. You may be getting more or less physical activity than usual and eating different foods.
- Get medical attention for heat-related illness. Certain diabetes complications, such as damage to blood vessels and nerves, can affect your sweat glands so your body can't cool as effectively. That can lead to heat exhaustion and heat stroke, which is a medical emergency. High temperatures can also change how your body uses insulin. You may need to test your blood sugar more often, and adjust your insulin dose and what you eat and drink.
- Drink plenty of clean, safe, water—even if you're not thirsty. People with diabetes get dehydrated (lose too much water from their bodies) more quickly. Not drinking enough liquids can raise blood sugar, and high blood sugar can make you urinate more, causing dehydration.
- Avoid alcohol and drinks with caffeine, like coffee and energy or sports drinks. They can lead to water loss and spike your blood sugar levels.
- Keep medicines, supplies, and equipment out of the heat. Insulin remains usable for 28 days at room temperature up to 86°F.
- Wear loose-fitting, lightweight, light-colored clothing.
- Wear sunscreen and a hat when you're outside.
- Don't go barefoot.

Diabetic Ketoacidosis

After a natural disaster or emergency, it may be difficult to manage your diabetes like you normally do. It may be harder to get healthy food or sometimes to even get some of your medicine. If you have type 1 diabetes, diabetic ketoacidosis is a life-threatening complication of diabetes that can occur

when management is interrupted. NIH information about ketoacidosis is located here: https://www.niddk.nih.gov/health-information/diabetes/overview/managing-diabetes

What is Diabetic Ketoacidosis (DKA)?

- **Diabetic ketoacidosis (DKA) is a potentially life threatening medical emergency.**
- **DKA happens when your body has a very high blood sugar and a build-up of acid. DKA occurs more often in people with type 1 diabetes (people who do not make any of their own insulin) but occasionally may happen in people with type 2 diabetes.**

What causes DKA?

- **The main cause of DKA is not having enough insulin, which can raise your blood sugar.**
- **Insulin helps the body's cells use sugar (glucose) to make energy.**
- **When your cells can't use the glucose they need for energy, your body begins to burn fat for energy, which produces ketones (fatty acids) which can cause a build-up of acid in the body, causing ketoacidosis.**
- **Having a high blood sugar level can cause more urination which may lead to dehydration.**

What can trigger DKA?

- **DKA is associated with not getting enough insulin, having a severe infection or becoming very dehydrated.**
- **When people are sick, they often need more insulin for many reasons. One reason is that when you are sick, your body produces stress hormones like adrenalin and cortisol, which may interfere with how your body uses insulin so your blood sugar goes up.**

What are symptoms and signs of DKA?

- **Thirst or a very dry mouth**
- **Frequent urination**
- **Fatigue**
- **Dry or flushed skin**
- **Nausea, vomiting, or abdominal pain (Please note: vomiting can be caused by many illnesses, not just ketoacidosis. If vomiting continues for more than 2 hours, contact your health care provider.)**
- **Difficulty breathing**
- **Breath has a fruity odor**
- **Confusion**
- **High blood sugar levels (over 240mg/dl for more than 2 checks. Blood sugar should be checked every 4-6 hours.)**
- **High levels of ketones in the urine**

DKA is dangerous and serious. If you have any of the above symptoms, contact your health care provider IMMEDIATELY, or go to the nearest emergency room of your local hospital.

How do I check for ketones at home?

- **Check for ketones at home by using a urine test trip.**
- **Ask your health care provider when and how you should test for ketones.**
- **Check your urine or ketones every 4-6 hours if your blood sugar is more than 240 mg/dl or if you are sick.**

Call your health care provider immediately if:

- **Your urine tests show high levels of ketones.**
- **Your urine tests show high levels of ketones and your blood sugar is high.**
- **Your urine tests show high levels of ketones and you have vomited more than twice in four hours.**

Do NOT exercise when your urine tests show ketones and your blood glucose is high.

How is DKA diagnosed?

Laboratory tests, including blood and urine tests, are used to confirm a diagnosis of diabetic ketoacidosis.

How is it treated?

When ketoacidosis is severe, it must be treated in the hospital.

How can I prevent DKA?

Talk to your doctor about making a sick day plan before you get sick.

Additional resources

- Emergency Preparedness; Healthcare Remedy: https://www.healthcareready.org/maria
- Blood glucose meters and test strips after a disaster: http://www.fda.gov/MedicalDevices/ProductsandMedicalProcedures/HomeHealthandConsumer/ConsumerProducts/BreastPumps/ucm055987.htm#bgm and
- Insulin storage and switching between products in an emergency https://www.fda.gov/drugs/emergencypreparedness/ucm085213.htm
- Resources for people with diabetes: https://www.cdc.gov/diabetes/ndep/people-with-diabetes/emergency.html

Cancer

Cancer patients who are treated with chemotherapy are more likely to get infections. Chemotherapy can cause a condition called neutropenia—a decrease in the number of white blood cells. These cells are the body's main defense against infection. Neutropenia often occurs between 7 and 12 days after receiving chemotherapy.

If you are being treated with chemotherapy, keep these tips in mind after an emergency.

- Take steps to avoid getting an infection. Clean your hands often, try to avoid crowded places and people who are sick, and stay away from moldy or dirty places.
- Watch for signs of an infection, like chills and sweats, a sore throat or other pain, nasal congestion, or vomiting.
- Call a doctor right away if you get a fever.

For more information visit https://www.cdc.gov/cancer/preventinfections/

Resources for individuals with other chronic conditions:

- Blood disorders: https://www.cdc.gov/ncbddd/disasters/blood.html
- Epilepsy and seizure disorders: https://www.cdc.gov/epilepsy/emergency/index.htm
- Asthma: https://www.cdc.gov/disasters/asthma_control.html
- Other chronic conditions: https://www.cdc.gov/disasters/chronic.html

PET SAFETY

CDC recommends the following guidance regarding Pet Safety in Emergencies:

- Make a Plan - Disasters can happen without warning, so be prepared for the event.
- Sheltering in Place - When sheltering at home with your pet, make sure the room chosen is pet-friendly
- If you need to evacuate, contact your local emergency management office and ask if they offer accommodations for owners and their pets.
- If accommodations are needed for your pet(s):
    - Contact local veterinary clinics, boarding facilities, and local animal shelters. Visit the Humane Society website to find a shelter in your area. .
    - Contact family or friends outside the evacuation area.
    - Contact a pet-friendly hotel, particularly along evacuation routes.
- Prepare a pet disaster kit - prepare a disaster kit for your pet(s), so evacuation will go smoothly for your entire family. Ask your veterinarian for help putting it together.
- Protect yourself from injury and illness - disasters are stressful for humans and pets alike. Practice safe handling of your pet, because your pet may behave differently during a stressful situation.
- Diseased pets can transmit to people during a natural disaster - natural disasters can contribute to the transmission of some diseases. Exposure to inclement weather conditions, stagnant

water, wildlife or unfamiliar animals, and overcrowding can put your pet at risk for getting sick. Some of these illnesses can be transmitted to people.

What if I am separated from my pet?

- Make sure that your family is in a safe location before you begin your search.
- If you are in a shelter that houses pets, inform one of the pet caretakers. Give the pet caretaker your pre-made missing pet handout.
- Once you have been cleared to leave the shelter and return home, contact animal control about your lost pet.
- For more information about pet safety during an emergency, please visit online: https://www.cdc.gov/features/petsanddisasters/index.html

EMPLOYER, WORKER, AND VOLUNTEER SAFETY AND HEALTH

Protecting the health and safety of responders and volunteers by preventing diseases, injuries, and fatalities is a National Institute for Occupational Safety and Health (NIOSH) Emergency Preparedness and Response Program priority (https://www.cdc.gov/niosh/emres/default.html). *Hurricane Key Messages for Employers, Workers, and Volunteers* is a separate document that focuses on key messages for employers, workers, and volunteers responding to Hurricanes Harvey, Irma, and Maria. It will be updated as new information becomes available and will be distributed regularly.

The document *Hurricane Key Messages for Employers, Workers, and Volunteers* can be found at the following link: https://www.cdc.gov/disasters/hurricanes/index.html.

CDC'S ACTIVITIES

CDC's Emergency Operations Center (EOC) is activated to bring together CDC and ATSDR staff to work efficiently to support the local, state, federal and global response to public health needs in the aftermath of the recent hurricanes.

During emergency events, the states lead response efforts and the federal government provides expert assistance when a formal request has been made by the affected state.

Internationally, countries lead their own response efforts and can request assistance from the United States government.

CDC and ATSDR have deployed staff to provide medical assistance and help coordinate additional response activities.

STRATEGIC NATIONAL STOCKPILE

When communities experience a large-scale natural disaster that overwhelms the affected area's medical care delivery system and depletes critical medicines and medical supplies, CDC and HHS can work to ensure that medicines and supplies get to the people who need them most.

As a critical player in disaster response, CDC's Strategic National Stockpile (SNS) rapidly delivers critical resources to the site of a national emergency for hurricane relief as part of the federal response and may deploy resources prior to landfall and/or directly following the aftermath of hurricane destruction.

In support of the federal response to Hurricane Maria, SNS is serving as a primary response arm for providing critical medicines and medical supplies, medical logistics support, specialized technical assistance responders, and capability to care for affected communities and displaced persons in Puerto Rico.

As of **November 14, 2017**:

- CDC's SNS has provided more than **$2.5 million** in supplies to support public health needs resulting from Hurricane Maria, including:
    - More than 81 tons of Disaster Medical Assistance Team supplies
    - **$143,000 vaccines for public health needs**
    - **$475,000** additional medical supplies purchased for Puerto Rico
    - 177,000 bottles of water
    - 42,000 meals ready to eat
- CDC's SNS has deployed six Federal Medical Stations (FMS) to Puerto Rico making available 1,500 beds, critical medicines, and medical supplies to treat and provide care for displaced persons with health-related needs. SNS is also supporting restock of FMS operations with shipments of medicines and supplies, as needed.
    - To date, three FMS are operational in cities, including Manati, Ponce, and Bayamón, Puerto Rico. Three more FMS are available, if needed. For more information on Federal Medical Stations, visit: https://www.cdc.gov/phpr/stockpile/fedmedstation.htm
    - CDC's SNS has deployed 15 FMS Strike Team personnel to Puerto Rico to assist with identifying existing facilities suitable for operation of FMS and provide subject matter expertise on set-up.
    - The first FMS and accompanying FMS Strike Team personnel arrived in Puerto Rico on September 26, 2017.
- CDC's SNS is providing ongoing medical logistics support remotely through the detailed management and coordination of critical medical materiel movement and transport to Puerto Rico. To date, SNS has also deployed eight SNS logisticians to manage on the ground logistics

and operations of a temporary 10,000 square foot warehouse facility in San Juan to support the FMS and Disaster Medical Assistance Teams.

- Supporting full-scale coordination efforts across the federal government, SNS has deployed a total of six liaison officers to the HHS Secretary's Operation Center in Washington, D.C. and six additional SNS personnel to San Juan to support the Incident Response Coordination Team as liaisons.
- CDC's SNS is working with HHS to provide vaccines **and ancillary supplies for preventable diseases**, including influenza (flu), hepatitis A, hepatitis B, **pneumococcal disease, tetanus, and rabies,** for Puerto Rico public health.
- CDC's SNS maintains limited stock of general medical/surgical supplies that may be used to resupply health care facilities as needed, when these products are not commercially available.
- CDC also has the capacity, through the SNS, to engage commercial supply chain partners to help them meet needs in affected areas.
- CDC also works with pharmacies to help identify obstacles and develop solutions to help patients access pharmaceuticals.
- Local retail, healthcare and public health officials or deployed responders (not CDC) provide direct intervention in pharmacy, clinical or public health dispensing to individuals.

ADDITIONAL WEB AND SOCIAL MEDIA RESOURCES

- https://www.cdc.gov/disasters/hurricanes/diaspora_toolkit.html
- https://www.cdc.gov/disasters/hurricanes/hurricane_harvey.html
- https://www.cdc.gov/disasters/hurricanes/index.html
- https://www.cdc.gov/nceh/toolkits/hurricanes/default.html
- https://www.cdc.gov/disasters/floods/index.html
- https://www.cdc.gov/nceh/toolkits/floods/default.html
- https://www.cdc.gov/disasters/hurricanes/pdf/infographic-be-ready-hurricanes.pdf
- https://www.cdc.gov/disasters/hurricanes/educationalmaterials.html
- https://www.cdc.gov/phpr/infographics/br-floods.htm
- https://www.cdc.gov/disasters/mold/report/pdf/2005_moldtable5.pdf
- http://www.nws.noaa.gov/os/water/tadd/

FOR MORE INFORMATION

- **CDC website**: http://www.cdc.gov
- **CDC Harvey website:** https://www.cdc.gov/disasters/hurricanes/hurricane_harvey.html
- **CDC Irma website:** https://www.cdc.gov/disasters/hurricanes/hurricane_irma.html
- **CDC Maria website:** https://www.cdc.gov/disasters/hurricanes/hurricane_maria.html
- **CDC emergency website**: https://www.emergency.cdc.gov
- **CDC-INFO by phone:**
    - Monday - Friday
      8:00 a.m. - 8:00 p.m. EST
    - 800-CDC-INFO
      (800-232-4636)
      TTY 888-232-6348
- **CDC-INFO by email:** https://wwwn.cdc.gov/dcs/ContactUs/Form
- **Related Websites**
    - **FEMA website**: https://www.fema.gov
    - **FDA website:** https://www.fda.gov